COUNTY OF ORANGE

INFORMATION SYSTEMS

STRATEGIC AND TACTICAL PLANS

FOR

1992-1993

Date: November, 1991
Prepared By: GSA/Information Systems

INFORMATION SYSTEMS
STRATEGIC AND TACTICAL PLANS
TABLE OF CONTENTS

Printed on recycled paper

EXECUTIVE SUMMARY

PURPOSE

This report represents GSA/Information Systems' and County Administrative Office's (CAO) response to the Board of Supervisors directive for an Information Systems Strategic Plan. It is intended to be used as a perpetual vehicle to set priorities and develop policies for technology utilization through the 1990s.

COUNTYWIDE INFORMATION SYSTEMS ISSUES

- Establishment of Countywide data sharing and access to enable application development from a corporate perspective.

- Inter-connection of all Departments via the IBM mainframe for electronic mail, automated forms processing and data interchange.

- Development of online database application systems on the IBM mainframe.

- Acquisition and expansion of departmental processors for local applications and office automation.

- Use of advanced telephone technology for phone answering, voice mail, data retrieval and data entry.

- Implementation of telecommuting concepts to reduce employee, client and general public automobile usage.

- Investigation and adoption of Optical Disc (imaging) systems where cost effective to increase productivity and reduce paper storage.

- Establishment of an annual Long Range Information Systems Planning process.

DIRECTION

In August 1989 the Board of Supervisors directed the CAO and GSA to develop an Information Systems Strategic Plan. The fiscal constraints under which the County has been operating in recent years has made it mandatory to find new ways to serve the public in the most cost-effective way possible. One vehicle for satisfying that need is the use of technology in general and Information System technology in particular to maximize the investment in the County's human resources.

Most, if not all, of the technological opportunities which are available to the County are applicable to multiple departments. To realize the full benefits of these technologies we need to develop a Countywide philosophy and a detailed plan which pinpoints the key areas where savings can be effected and benefits maximized.

PLAN STRUCTURE

The plan has been structured to provide high level strategic direction, in response to the issues stated above, as well as tactical plans to carry out those strategies.

MISSION STATEMENT

GSA/Information Systems (GSA/IS) is charged with the primary responsibility for evaluating and implementing information technology. To that end, it sets goals and objectives that direct the County of Orange's efforts in adopting and operating cost effective information technologies within imposed budgetary constraints.

As a function within the General Services Agency, we embrace the following GSA organizational values:

Quality	-	to deliver the highest reasonable level of service.
Honesty	-	to deal with others in an open and frank manner.
Risk Taking	-	to provide an environment for the exercise of initiative and calculated risk.
Teamwork	-	to encourage the "We" versus the "I".
Competence	-	to perform required tasks to acceptable standards.
Responsiveness	-	to perform a quality service in a reasonable time frame.
Accountability	-	to accept responsibility for results.
Sensitivity	-	to be aware of the impact of actions.
Efficiency	-	to provide services effectively and economically.
Sustainability	-	to ensure the consistent delivery of services.

We fulfill this mission through the development and implementation of strategies based on our values. These strategies provide the core direction for solving the Information Systems' issues facing the County of Orange and include:

Planning	-	*to establish long-range information systems planning*
Customer Service	-	*to develop a partnership between GSA/IS and its customers*
Information Architecture	-	*to develop a flexible information systems architecture*
Technology	-	*to develop an appropriate and consistent technology focus*
Acquisition	-	*to create a cost-effective acquisition approach*
Personnel Resource	-	*to provide an environment which encourages professional growth*
Service Provider	-	*to create a cost-effective approach to contracting*

STRATEGIC PLANS

Planning
Customer Service
Information Architecture
Technology
Acquisition
Personnel Resource
Service Provider

1

This page intentionally left blank

PLANNING STRATEGY

OBJECTIVE:

To establish and maintain a long-range information systems planning process encompassing the central County information systems organization and all agencies/departments.

ISSUES:

Information systems projects are long-term in nature and involve large commitments of County resources, both financial and human. An annual long-range planning effort is required annually prior to the budget process to ensure that these projects are evaluated and prioritized to maximize the use of limited resources. The resultant plans and supporting analyses will assist the CAO in making budget requests or decisions based on Countywide strategies and priorities which provide the best return-on-investment.

The plans will be based on the best available information at the time they are written. Recognizing that we work in an ever-changing environment, we must be prepared to modify them to accommodate unexpected events, new opportunities, changing resource requirements, and technological breakthroughs. Mid-course corrections are sometimes necessary.

PROCESSES :

We will maintain our proactive focus and commitment to planning through the following initiatives:

1. *GSA/Information Systems (GSA/IS) will conduct collaborative planning efforts with each agency/department within the County of Orange to more closely tie actions with business plans.*

    -   *Agencies/Departments will prepare annually an updated Long-Range Information Systems Plan for a five-year planning horizon.*

    -   *GSA/Data Systems will prepare annually an updated Data Center hardware/software plan for a five-year planning horizon.*

    -   *GSA/IS will prepare annually an updated mainframe application system development/replacement plan for a five-year planning horizon.*

    -   *On an annual basis, GSA/IS will integrate all of the plans into an updated overall direction for the County of Orange recognizing both the separateness of the agencies/departments and the need to optimize activities in support of the overall County of Orange mission.*

    -   *GSA/IS and the CAO will prepare annually by November 30 an updated Countywide Information Systems Strategic Plan to be presented to the Board of Supervisors.*

CUSTOMER SERVICE STRATEGY

OBJECTIVE:

To develop a partnership, based on trust and a common understanding of goals and capabilities, between GSA/IS and its customers as the basis for providing quality service to them. Our customers consist of County agencies/departments, as well as the cities of Orange County general government.

ISSUES:

GSA/IS is an organization within Orange County whose responsibility is to deliver support, or products, to its customers. Our resources and expertise are delivered through three categories of services:

1. Consultation services is the broadest category of assistance supplied to our customers. We use our professional training and experience to analyze and solve problems; our responsibility is to offer expertise across a wide spectrum, from suggestions of better ways to run our business to question-and-answer dialogue regarding the function of a computer workstation on a customer desktop.

2. Production services are delivered principally through the GSA Data Center Operations section, GSA/Telephone and GSA/Communications Division.

3. System development service is the creation or modification of computerized systems, for which we utilize our design, coding and implementation expertise.

Our customers judge our effectiveness through three measures:

- Did we deliver the correct product?

- Was it delivered on time?

- Was it cost-effective?

GSA/IS is in the best position to provide the highest service to our customers, and to meet their measured expectations, if our relationship with them is that of a partnership. We must understand our customers' business requirements, plans and processes; they need to understand our capabilities and limitations. It is vital that we trust our partners and that we are worthy of their trust.

STRATEGIES:

We will maximize the value of GSA/IS for our customers through a continuous process of enhancing our vitality as a service organization.

1. *Stay in front of our industry in our ability to support our customers by providing the most responsive technical capabilities at competitive product administration cost.*

2. *Develop and enhance collaborative planning efforts with our customers in order to better focus our longer-term support efforts. We will develop a process to annually review the strategic plan with our customers to set our shorter-term project goals.*

3. *Continue to encourage our GSA/IS staff to participate in government professional activities, such as California Association of County Data Processors, Associated Public-Safety Communications Officers, Inc. and various government technology conferences.*

4. *Actively seek out opportunities for GSA/IS participation in customer business activities in order to better understand their environment. We will offer similar opportunities to our customers so that they can better understand the dimensions of GSA/IS.*

We will measure our effectiveness in a proactive way and in a manner of honest self-appraisal.

INFORMATION ARCHITECTURE STRATEGY

OBJECTIVE:

To develop and maintain a coherent and flexible information systems architecture for the County of Orange which will facilitate the business objective of the individual agencies/departments and the County as a whole.

ISSUES:

There are platform choices between mainframe, midrange and microcomputer.

Cooperative processing is the distribution of information processing across multiple platforms, based on considerations for cost and ease of use. Cooperative processing architectures could have significant strategic and tactical value to Orange County business operations.

We need to transition from personal computers to the concept of a County workstation, a user desktop platform. This County workstation architecture should treat the platform and the business activities performed around it as a true County asset.

STRATEGIES :

In order to achieve the optimum information systems architecture for the County of Orange, we will:

1. *Develop a cooperative processing strategy through investigation and research. This strategy will guide the utilization of cooperative processing techniques in our application designs.*

2. *Develop a Countywide voice/data network to enable access to all agency/department information from any County location.*

3. *Provide a Countywide public safety radio communications network to connect all Orange County police, fire and paramedic organizations.*

4. *Provide a technical environment which will allow data sharing across all County agencies/departments.*

5. *Develop a local area network (LAN) strategy for Orange County which will address our unique as well as our generalized business requirements. Formulate a strategy that addresses the two major impact areas of backbone LAN and departmental LAN. Ensure that the strategy will facilitate:*

   • *a more cohesive and integrated agency computing environment;*

   • *the integration of large systems applications with desktop computing functions;*

   • *the incorporation of remote users into our overall architecture; and*

   • *the access to all agency/department information from any County location.*

6. *Implement the transition from personal computers to a County workstation architecture which will include consideration for:*

   • *ensuring the best workstation utilization across the County's operations;*

   • *advanced microcomputer architectures; and*

   • *connectivity within our communications network and integration with existing and planned applications.*

TECHNOLOGY STRATEGY

OBJECTIVE:

To develop and maintain an appropriate and consistent technology focus and to utilize technology tools within the County Data Center and throughout the County in a manner consistent with County business objectives.

ISSUES:

Technology issues are constantly evolving due to the nature of the information systems business and the County's changing business environment. There will rarely be a complete list of strategic technology initiatives that is lasting over a long period of time. We must focus on those technologies with strategic significance and be alert for new opportunities as we progress.

The technological choices are numerous and the costs are significant. Further, there are platform choices between mainframe, midrange and microcomputers. County business needs must drive this platform selection process. Special care must be taken that these selection and support criteria are based on strategies derived from our County business objectives.

Choices of vendors must be based upon considerations for cost, quality, risk, product function and vendor-supplied support (value added) under the umbrella of the County competitive procurement processes.

STRATEGIES:

1. *The migration to newer technology in central processors will be driven by:*

   - *changing customer requirements;*

   - *opportunities to improve cost-effectiveness; and*

   - *clear evidence of strategic benefits related to County business.*

2. *Within the Data Center, a commitment will be made to the intelligent automation of decision-making tasks. This is a process, not a project; it provides better, faster, and more cost-effective services to our customers. The process of automated operations extends beyond the CPU and encompasses:*

   - *the management of host and peripheral device resources;*

   - *The handling of tape;*

   - *report tracking, online viewing, printing and distribution;*

   - *job scheduling, submittal and restart (when required);*

   - *productivity tools;*

   - *change, problem and performance management;*

   - *the way user applications are designed, in terms of their impact on the Data Center; and*

   - *our selection of software packages.*

3. Image processing in the County of Orange will be consistent with business needs; it will be based on a Countywide plan, including a detailed cost/benefit analysis and will be driven by the need to:

   - improve control over document and information flow;

   - increase general access to documents and their information;

   - reduce space and cost of hardcopy storage;

   - reduce time/labor needed to retrieve information;

   - improve security of documents;

   - improve work flow; and

   - improve service to the public.

4. Improved service to the public will be implemented with technologies such as:

   - multi-lingual public access to County information from any location deemed appropriate;

   - ATM-like technology to provide faster service for the public, such as paying traffic tickets, tax bills, etc;

   - voice response systems to public for County information such as status of pending transactions for building permits or eligibility of benefits; and

   - image processing.

5. Telecommuting can be made a more viable and cost-effective option by using technology to establish work centers in neighboring counties or in outlying sections of Orange County.

6. The limited amount of radio spectrum available to Orange County and its cities will be maximized.

7. Telephone and data services will be maximized through combined use of the Orange County Telecommunications Network (OCTNET), T1 circuits and long-distance carriers utilizing the most cost-effective solution for each business need.

ACQUISITION STRATEGY

OBJECTIVE:

To create a cost-effective approach to the acquisition and/or development of IS hardware and software in the County of Orange.

ISSUES:

The last decade has been characterized in the County of Orange by a continual growth in the acquisition and expansion of both central and departmental processors and application systems. Much of this growth has been incremental rather than the result of careful planning.

There are several problems which have resulted from the incremental acquisition of departmental and central processors/applications and lack of standards. The major problems include:

- Difficulty in achieving needed Countywide interconnectivity and inter-agency data sharing due to wide variety of vendor hardware and communication protocols.

- Lack of vendor support for hardware problems, application development, processing performance problems, security issues, and training due to the failure to follow a formal, rigorous definition and selection process.

- Inability to take advantage of centralized training, troubleshooting, technical support, volume buying, and software development as well as diminished personnel mobility and software/data exchange among agencies due to proliferation of hardware platforms and software operating systems, languages, word processors, spreadsheets, electronic mail and the like.

STRATEGIES:

The following strategies are presented in order to alleviate or eliminate the problems discussed above:

1. *GSA/IS, in conjunction with Information Systems Managers Forum (ISMF) sub-groups, will develop and maintain standards for the acquisition of departmental processors, operating systems, communications protocols, office automation software, and application development tools. These standards will be structured to provide flexibility in meeting agency needs while insuring that the problems enumerated above are reduced to a minimum. The document "Policies for Information Systems Acquisitions and Projects" can be found in attachment B.*

2. *GSA/IS will develop and maintain standards for the acquisition/development of application systems. These standards will encompass all processes in the system development life cycle (SDLC) as well as the acquisition processes involved in outside contractor development or the purchase of software packages.*

3. *All departmental hardware/software acquisitions, other than routine replacement, will be supported by a five-year plan, and will include an adequate department staff and funding to support each project's implementation, operation, maintenance, security, software development, and user training.*

8

PERSONNEL RESOURCE STRATEGY

<u>*OBJECTIVE*</u>:

To provide an environment and process which encourages and enables the professional growth of the County of Orange information systems personnel.

<u>*ISSUES*</u>:

The County of Orange has a large investment in information systems professionals including specialists in every facet of information systems technology as well as managers of those individuals.

The ability of these technicians and managers to move freely across organization lines when positions become vacant is necessary to achieve growth in knowledge and position. It is also both a powerful motivator and a major factor in retaining the most qualified and effective performers.

<u>*STRATEGIES*</u> :

GSA/IS will work with the Information Systems Managers Forum (ISMF) and with the County Personnel Department to:

1. *Continually review and update information systems job descriptions and career paths recognizing both the separateness of the agencies/departments and the need for an overall County promotion and job interchange policy.*

2. *Continually review and update the information systems recruiting process recognizing the unique needs of the agencies/departments and the overall County need for hiring people capable of growth beyond the immediate requirement.*

3. *Develop a recruiting process which will give preference, based on merit and qualifications, to County employees when an information systems job opening occurs, before considering hiring from the non-County work force.*

4. *Develop a training program which will allow and encourage information systems employees to prepare for future job change and/or promotion across agency/department lines.*

SERVICE PROVIDER STRATEGY

OBJECTIVE:

To create a cost-effective approach to contracting for information systems services which maximizes the creative potential of the private sector, while maintaining County operational and quality control.

ISSUES:

- Contracting for Facilities Management Operational (FMO) services has often been fragmented, resulting in higher costs and lack of continuity.

- Private FM contractors require a long-term commitment and greater flexibility to manage the delivery of services in order to more efficiently control their cost and consistently deliver a quality product.

- Controlling costs for contracting for FMO services as opposed to providing similar services with County staff.

- Telecommunications and information processing services can be more efficiently provided when products and systems architecture can be standardized, consistent with the County's competitive purchasing program.

STRATEGIES:

We will strive to provide a cost-effective contracting process in the following manner:

1. *Negotiate multi-year incentive-based performance contracts for facilities management organizations to maintain and operate the County's data processing, telecommunications and information processing facilities.*

2. *Continually evaluate proposals to contract FMO services as opposed to performing these services with County personnel.*

3. *Develop strong contract management capabilities to direct, monitor, evaluate and negotiate all major contracts.*

4. *Fully involve data systems user departments in the selection and management of contracts related to new system development.*

5. *Adopt contracting strategies designed to standardize telecommunications equipment and services purchased by County agencies/departments within the competitive program of the County's Purchasing Division.*

6. *Work closely with agencies/departments to incorporate standard contracting solutions to telecommunications and information services (i.e., local area networks, voice processing, etc.) requirements.*

7. *Create an open, honest partnership with our vendors, sharing our vision and eliciting their support in achieving our goals.*

TACTICAL PLANS

Communications
Telephone Systems
Data Systems
Data Systems Customer Support

This page intentionally left blank

INFORMATION SYSTEMS TACTICAL PLANS
COMMUNICATIONS

INTRODUCTION:

The Communications Division of the GSA/Information Systems Function plans, develops, implements and supports high quality centralized, coordinated communications systems to serve all of the County's and cities' general government and public safety communications needs. Responsibilities include:

- Providing sound, security and video system support to all County agencies;

- Providing operational, engineering, planning, and maintenance support for all systems in a manner that maximizes their efficiency and maintains a state of constant operational readiness;

- Insuring that the mutual aid communications requirements of Orange County and its cities for communicating with agencies outside of Orange County are maintained in a high state of readiness and inter-operability;

- Responding quickly to extraordinary communications needs of any emergency, large or small;

- Reviewing, monitoring, and being prepared to take action to protect the interest of Orange County by responding to proposed governmental regulations, radio spectrum allocation actions, or other official actions that affect Orange County; and

- Maximizing the utilization of the limited amount of radio spectrum available to Orange County and its cities.

CURRENT ENVIRONMENT:

A primary function of the GSA/Communications Division is the support of a Countywide coordinated public safety communications system. This system supports all County and city public safety agencies on a common regional radio communications system. This system is composed of a Countywide law enforcement communications system supporting over 4,500 mobile/portable radios and several specialized subsystems including a paramedic communications system and systems supporting EMA, GSA, Airport, HCA/Animal Control, Probation, and others.

The Division has two staffed locations: the Communications Center ("Control 1") located at 481 The City Drive South in Orange and office/storage space at 1985 South Santa Cruz Street in Anaheim. Additionally, there are ten major remote radio sites and several minor equipment locations throughout Orange County. Control 1 is staffed by the Communications support staff and provides centralized coordination and mutual aid support on all of the systems for all participating agencies. The facility operates 24 hours per day, seven days a week, 365 days per year.

The administrative, engineering and technical staff located at the Santa Cruz facility provide centralized coordination and mutual aid support on all of the systems for all participating agencies. The engineering and technical staff also provide engineering and complete maintenance support for the coordinated regional communications system which includes backbone radio systems, field equipment, sound and security systems, video, and fire alarm systems.

In addition to these two staffed locations, systems and equipment, which is required to provide Countywide radio coverage, is located at ten major remote radio sites and several minor equipment locations throughout Orange County.

GROWTH AND CHANGE FACTORS:

- ### *Loma Ridge Communications Center/Emergency Operations Center*

   The expansion of the Theo Lacy Jail at the City Drive South in Orange required the space occupied by the adjacent communications center. As a result, construction of a new communications center and emergency operations center (EOC) was initiated at Loma Ridge, east of the City of Orange, and is scheduled for occupancy by July 1993.

   The new combined communications center and EOC will house the Operations Unit and backbone systems equipment for the regional coordinated public safety communications systems and all subsystems. The facility is 30,000 square feet in size and is constructed to withstand predicted earthquakes and other natural disasters. It is located on a hilltop at the 1,300 ft. elevation and has direct radio coverage to over 80% of the population of Orange County. Approximately 50% of the facility will be dedicated for use as an EOC. The EOC is designed to support up to 150 staff during an emergency and will have complete communications capabilities.

- ### *800 MHz Law Enforcement/Public Works Communications System*

   Due to significant growth in Orange County, the requirement for communications system capacity continues to grow. The existing UHF law enforcement system, installed in 1973, has exceeded its capacity by over 100%. As a consequence, a replacement system, the 800 MHz Law Enforcement/Public Works Communications System, is planned to be completed by July 1994.

   GSA/Communications, with the cooperation of the Orange County Chiefs of Police and Sheriff's Association, began the planning process for replacing the system in 1985. The result was a recommendation to implement a combined law enforcement and public works communications system. Cost estimates for the entire system, which will be shared with all of the participating cities and districts, are up to $48 million.

   A critical requirement for the new radio communications system is an adequate number of radio channels. Additional channels in the spectrum used by the existing system were not available. To partially address the public safety communications requirement, and as a result of Congressional direction, the Federal Communications Commission designated a small amount of new spectrum. Communications Division staff participated in the regional planning process required by the FCC prior to allocation of this new spectrum in Southern California and were able to obtain authorization for a total of 61 new 800 MHz channels for use in a new system. These channels will be sufficient to support a system that will meet the projected needs of Orange County and its cities for the next twenty years. Law enforcement mobile and portable radio equipment that will use the new system are expected to exceed 7,000 units and, with the inclusion of public works agencies, usage may easily grow to over 10,000 units by the year 2000.

FUTURE ENVIRONMENT and COMMUNICATIONS PLANS:

- ### *Loma Ridge Communications Center and EOC*

   Planned completion of the Loma Ridge Communications Center and EOC building is August 1992. The operating equipment will be installed and optimized over a one-year period and planned occupancy of the facility is July 1993.

Plans include the purchase and installation of new systems and supporting equipment, radio control consoles, digital microwave, landline intercommunications equipment, paramedic switching system, telephone system, and moving the law enforcement message switching system to a mainframe environment. All replacement systems must be fully activated prior to moving so that no service disruption occurs. A portion of the equipment was purchased over the early phases of the implementation process. The balance of the equipment will be purchased and the installation, activation, and optimization completed by July 1993.

- ## Centralized Maintenance Facility

The existing Communications Division facility at 1985 South Santa Cruz St., Anaheim, CA is leased. The lease term, which began on November 15, 1988, is for five years with five additional extensions of one year each. The facility is located adjacent to the Santa Ana Freeway. The planned expansion of the Santa Ana Freeway may impact the usability of the existing maintenance facility. It is currently unknown when the freeway will be expanded and what the exact impact on the facility will be.

Plans include the preparation of a needs assessment for a permanent location for the new centralized maintenance facility during the next year.

- ## Communications Systems

Digital Microwave System: The existing communications system utilizes older technology (analog) microwave to interconnect all of the remote radio sites to the main control center. This technology is not compatible with the OCTNET telephone system microwave. A significant step in the transition to the new communications center was the purchase of a new digital microwave system which will replace the old technology and provide full compatibility with the OCTNET telephone system microwave.

Plans include evaluating the feasibility of cross use of the two microwave systems, to provide redundancy and potential savings, through joint use of some microwave paths and the cost effectiveness of combining the maintenance of the Communications digital microwave system with the maintenance of the OCTNET digital microwave system.

800 MHz Law Enforcement/Public Works Communications System: This 800 MHz Law Enforcement/Public Works Communications System will replace the existing systems used by law enforcement and public works agencies in Orange County with a state-of-the-art system that will meet the needs of Orange County into the 21st century. Tasks include:

- Completing an RFP process, completion of backbone facilities, installation of backbone system, law enforcement transition (1994) and public works transition (phased process, 1993-1997).

- Evaluating the feasibility of additional uses of the National and Statewide Mutual Aid Channels. The State of California, Governor's Office of Emergency Service, Telecommunications Division has formally approved the County's Mutual Aid Implementation Plan for use of the National and Statewide Mutual Aid Channels. This opens the way for the use of this new mutual aid resource for not only law enforcement and public works agencies, but for cross-communications between this system and the 800 MHz Trunked Fire Radio System and also for inter-operability with Federal, State, and local agencies from outside of Orange County.

- Making the mutual aid plan available to other agencies participating in the Southern California Regional Plan. Work with other jurisdictions to develop compatible plans using the Orange County plan as a model.

Mobile Data Terminal Systems: A mobile data terminal system is needed to supplement the communications capabilities of the Sheriff and other County law enforcement agencies. This system will reduce the amount of air time required on the Sheriff's main dispatch channel and provide support to their computer aided dispatch system. Plans include providing a mobile data terminal system as part of the 800 MHz Law Enforcement/Public Works Communications System proposal process. This requirement is included in the RFP.

Countywide 900 MHz Radio Paging System: A Countywide 900 MHz paging system is operational and is used primarily for emergency paging for the Fire Department. The excess capacity is available for general County administrative paging. Plans include expanding the utilization of the system to include cities or other governmental agencies that wish to use the excess system capacity.

Message Switcher: The GSA/Communications Division provides law enforcement data access through the use of a message switching computer system which is connected to the California Law Enforcement Telecommunications System (CLETS) in Sacramento. This system serves all law enforcement agencies in Orange County. Due to the move planning for Loma Ridge, it was determined that the system should be moved to a mainframe environment. This project is being coordinated with the Sheriff and GSA/Data Systems and the transition will coincide with the Communications Center move to Loma Ridge. Plans include taking action to complete the tasks required for a move to a mainframe environment in FY 1991-92.

800 MHz Trunked Fire Radio System: The 800 MHz Trunked Fire Radio System Backbone is a complex trunked communications system that provides all of the fire communications in Orange County and has been in operation since May 1988. In order to keep this new technology system operating at maximum efficiency and to meet changing requirements, continuing support to keep up with the changes and modifications is necessary.

Plans include installing additional base stations at selected locations during the next year. These include: Catalina Island, Silverado Canyon, and Carbon Canyon. These are all specialized repeater cells which will improve coastal coverage and upgrade coverage in the isolated areas in Silverado Canyon and Carbon Canyon.

SCEPP and Emergency Preparedness: The Emergency Broadcast System (EBS) is a "Packet" communications system that uses printers located at each Orange County radio/TV station. The system is capable of sending hard copy EBS messages to each station from Control I or the Emergency Operations Center. A plan of improvements that will provide increased reliability in the Emergency Broadcast System is being developed and full implementation of these changes will be completed with the move to the Loma Ridge facility in July 1993.

• *Radio Amateur Civil Emergency Service (RACES)*

The RACES program is a volunteer organization comprised of amateur radio operators which is available and intended to provide additional communications links during emergencies. It is the only amateur group authorized to operate during a declared national emergency. This operation is under provisions of special rules and under specific conditions. RACES is an integral part of the operation of many of the emergency systems used by the County, they respond and operate equipment at the County emergency operations center, and provide the only direct radio link to the State Office of Emergency Services in Sacramento that is not dependent on intervening equipment.

Plans include:

- Ongoing development of plans to utilize these volunteers in regular drills and tests of their amateur systems.

- Working with cities to develop their own RACES programs to increase this capability on a Countywide basis. Encourage each city to adopt the County of Orange Radio Amateur Civil Emergency Service (RACES) program and implement program within their jurisdiction.

- Developing joint training programs for RACES volunteers.

· **Radio Frequency Interference Abatement**

The radio congestion in the Southern California area results in severe cases of interference to the County and city Public Safety radio systems in Orange County. Unfortunately, the growth in congestion and resultant inadvertent interference is compounded by a growing incidence of intentional intruders into the Public Safety radio spectrum, both by "jammers" and uninformed commercial users with equipment purchased from unscrupulous vendors. Uncontrolled interference can cost time and potentially jeopardize officer safety and the public's safety.

The identification and resolution of this type of interference is extremely labor-intensive. Communications Division engineering staff are working to develop a standardized approach to tracking and eliminating radio interference to/from Public Safety Radio Systems in Orange County. This proposed uniform and consistent approach to interference tracking and resolution is critical to the efficient operation of the regional communications systems used by Orange County and its cities.

Plans include development of a standardized approach to these interference problems. The sophisticated radio direction finding equipment which is necessary to improve the ability to locate interference sources will be included in the 1992/93 budget.

· **Federal Communications Commission (FCC) Activity**

Communications Division engineering staff continuously review current FCC dockets for issues of concern to the Public Safety agencies served by the Division and regularly comment on proposed rule-making by the FCC. They also contribute regularly to major comments and reply comments filed by the California Public Safety Radio Association (CPRA) and by the Associated Public Safety Communications Officers (APCO) on FCC matters. This includes participation in APCO Project 25 (new digital radio technology), APCO Project 26 (additional shared UHF television spectrum), and APCO Project 28 (2 GHz microwave retention preparation for the 1992 Mobile WARC).

· **FCC Licensing**

A major task of the Communications Division engineering staff is licensing the large number of radio channels needed to support the systems used in Orange County. Maintaining existing system licenses and obtaining the necessary radio channels for future growth is a continuous task.

Licenses were granted by the FCC on the National Plan channels for the new 800 MHz Law Enforcement/Public Works Communications System on August 16, 1990. Spectrum availability is extremely limited and there is little relief in sight. Only through the efficient utilization of existing spectrum can we continue to meet our future needs.

Plans include working with engineering staff in other parts of Southern California to convince the FCC that additional spectrum should be released for public safety use in this heavily congested area. Additional compatible spectrum would allow future expansion and future growth potential.

INFORMATION SYSTEMS TACTICAL PLANS
TELEPHONE SYSTEMS

INTRODUCTION:

The Telephone Systems Division of the GSA/Information Systems Function plans, develops, implements and supports voice and data communications to serve the County's needs. Responsibilities include:

- Providing voice and data communications support to the County of Orange departments and agencies in an effective and efficient manner using OCTNET facilities where feasible or through public carriers (Pac Bell, GTE, etc.) if necessary or cost effective;

- Providing engineering, planning and maintenance support for all systems in a manner that maximizes their efficiency and minimizes downtime; and

- Keeping abreast of technical changes and planning the application of new technology to meet the needs of the County of Orange.

CURRENT ENVIRONMENT:

The GSA/Telephone Systems Division (TSD) operates and maintains telephone switches, a microwave system connecting those switches, Data Communications Equipment (DCE) used within OCTNET to support data transmission and an extensive cable plant supporting telephone and data circuits. The OCTNET system supports the voice and data communications requirements of all County departments and agencies and includes the use of commercial carriers such as Pac Bell at locations where the use of OCTNET facilities is not feasible, or cost effective.

The Telephone Systems Division staff is housed at the County Operations Center on Grand and McFadden in Santa Ana. General Telephone Network Services (GTE) is the vendor that operates and maintains OCTNET equipment and provides cable installation and maintenance services. A Network Control Center (NCC), operated by GTE, acts as the focal point for trouble calls during the normal workday with standby people available on-call at other times. The County's Telephone Systems Division staff provides customer interface, telephone operators, network and switch planning, facility planning, cabling, contract monitoring and billing services. The planning function includes planning the cable, telephone and telephone switch requirements for new facilities.

The OCTNET switch system consists of 27 Meridian SL-1's and one SL100 switch connected via the County's microwave system using Digital T1's and serves approximately 13,750 users. The SL100 is the hub of the network and performs all the least cost routing capability in the network. Least cost routing sends calls to their destination using OCTNET, Pac Bell, MCI or whatever routing is the least costly to the County. The system also provides a variety of other features to reduce cost and enhance productivity. Examples include:

- Coordinated Dial Plan (CDP) - which allows the public to call a local telephone number to reach the County Operator Consoles and eliminates callers from having to pay zone usage charges.

- Direct Inward System Access (DISA) - feature which allows County employees located at nonOCTNET locations to gain access to the OCTNET system and place calls throughout the County toll free.

- Voice Mail Service (VMS) - which provides voice mail services to thousands of County employees at various locations. The voice mail systems also provide an Automated Attendant feature that provides the public with a selection of recorded information and reduces the need for clerical staff.

All OCTNET sites, in addition to their microwave network connections, have telephone company phone lines terminated at each site to enhance the reliability of the telephone system. These phone lines, or trunks, connect OCTNET locations to the phone company public network and carry incoming and outgoing calls. All outgoing long distance calls are routed to the SL100, which routes calls through either MCI or CALNET, depending on whether the long distance call is to an out-of-state or in-state location respectively.

OCTNET's microwave system consists of 30 microwave locations throughout Orange County. There are four major hubs: North, South, Central and Harbor Courts, which tie most of the 30 microwave locations together. The total capacity of the microwave system is 166 T1 communication links which equals 3,984 voice channels. All of the radios have redundant hardware to ensure the reliability of the system. Should the microwave go out of service, limited backup is provided by telephone company circuits that provide continuing voice service in a degraded mode.

In the Civic Center, an extensive cable plant connects County facilities to the SL100 switch located at the Central Courthouse. Each telephone in the Civic Center has a unique telephone cable connected to the switch. At non-Civic Center locations, the connection between the local switch and the main hub is via the County's microwave system, with cable connecting each telephone to the switch supporting that location. At nonOCTNET locations, the local telephone company provides the telephone and associated cable support. Data cable is also provided by OCTNET to connect terminals to departmental computers or terminal controllers. There are approximately 4,000 data cables in that network.

Data Communications Equipment (DCE), maintained through OCTNET, includes approximately 120 modems, 64 line drivers and 20 port-sharing devices that support data circuits throughout the County. That equipment connects users to the computers located in the Data Center, which is operated by the GSA/Data Systems Division.

GROWTH AND CHANGE FACTORS:

- ### Telephone Switches

  The total number of telephones in use throughout the County has not changed appreciably over the last few years and is not expected to change in the next year or two. The total number of instruments is directly related to the number of County employees and as that has remained relatively constant, so has the number of telephone sets in use. What has changed is how telephone service is provided. As County departments consolidate facilities or relocate, telephone support is being shifted wherever feasible to OCTNET equipment. By increasing the number of telephones on OCTNET, the OCTNET fixed costs are spread over a larger number of instruments and the cost per user will decline. To support relocations, the number of SL-1 telephone switches has grown and new switches were installed in 1991 at the Cooper Building, La Palma and 1055 North Main. Telephone support for the GSA/Communications Division's move to Loma Ridge will also require installation of an SL-1. Tentative plans are to move the SL-1 from 801 Civic Center Drive to Loma Ridge and connect the 801 Civic Center phones to the SL100 located in the Central Courthouse.

- ### Microwave

  The growth of users in the South County necessitated the installation of a greater transmission capacity and a new 6 GHz microwave radio was installed in July 1991 that more than doubled the availability capacity. The upgrade also increased the power of the radio, which enhanced

reliability. The microwave radios removed from South County and other closed locations are being reused at the 3320 La Palma, 1845 Orangewood, Cooper Building and 1055 North Main facilities. Some minor hardware changes may be needed at other locations throughout the network to support the addition of circuits at specific locations, primarily the growth in data circuits.

The investment in cable to support voice and data transmissions has grown tremendously over the past year as new facilities were opened such as the Cooper Building and the Manchester Complex and data terminals were added to data networks. For instance, the number of cables installed to support data terminals using the mainframe computers operated by GSA/Data Systems Division grew by 1,327 in the first eight months of 1991. More terminals will soon be added to support such new systems as CAPS and the new Municipal Courts computer system.

- **Data Communications Equipment**

In October 1992, GSA's Data Center will relocate from the basement of Building 12 in the Civic Center to a facility under construction at the County Operations Center at Grand and McFadden. The approximately 450 data circuits terminating at the present location must be reterminated to the new facility. An RFP was issued to replace the data circuits and a vendor will be selected in January 1992. There are three basic strategies under study:

- Convert all circuits to Pac Bell digital lines.

- Convert all circuits to OCTNET lines running through the OCTNET switches.

- Install a separate data network of T1 circuits that use the OCTNET microwave system as the backbone for the new data network.

The three alternatives are being evaluated for risk, future growth capability, cost, reliability and ease of maintenance. The most critical aspect of the Data Center move will be the relocation of the data circuits and the selected alternative must minimize the risk of that operation. The selected alternative must also support high speed communications for such applications as video conferencing and the transfer of data stored in optical form. Reliability and ease of maintenance are critical aspects of any data communications network.

FUTURE ENVIRONMENT:

- **Switches**

Ongoing enhancements to the County's telephone switches are needed to ensure an adequate level of service to OCTNET users. Several switching systems are scheduled to be upgraded this year to handle the current as well as anticipated OCTNET requirements. The rest of the switches must be upgraded in the next year or two to the latest software releases to provide additional features and better reliability. An optimization of the network is underway to provide the optimum balance between costs and service. This addition or deletion of trunks is an ongoing effort because offices are relocated and calling patterns change and can result in significant cost and performance benefits.

A new switch will be installed at Loma Ridge and the SSA's Orangewood facility will be cabled to an existing switch. The switch supporting the County's Operations Center will be expanded to support the new Data Center under construction there. Disaster prevention and recovery will be emphasized at all switch sites to improve the robustness of OCTNET and its ability to avoid downtime and recover from outages.

- *Microwave*

  The planned expansion of the Olinda Landfill may require replacement of the North County microwave radios because of the need to relocate the microwave antenna. The planned location of the new antenna will exceed the distance limitation for the present radios and a 6 GHz radio will be needed.

  GSA/Communications Division is installing a new digital microwave system to support emergency radio communications throughout the County. As their system matures, it may be possible to merge the Telephone Systems Division microwave systems with the Communications Division system and achieve better reliability and cost savings by sharing transmission facilities.

  Spare parts for the MA/COM 23 GHz and Sanbar 18 GHz radios are difficult to acquire because these radios have not been manufactured for three years. The only spare parts available are on the shelf, or parts available from surplus dealers. As those sources of spare parts become exhausted, repairing the radios will become increasingly difficult. GTE is studying the expected life of those radios and will provide an analysis of the options available.

- *Cable Plant*

  A tremendous increase in the cable plant was needed to support the Cooper Building, La Palma, 1055 North Main and Manchester complexes. Miles of cable was installed to connect over a thousand telephones installed in those facilities. The type of cable installed is evolving as user needs change and higher technologies, particularly data requirements, dictate the need for cable with greater capacity. Local Area Networks (LAN's), graphical data and images are examples that must have a higher grade of cable.

- *Data Communications Equipment*

  The reliability of the Data Network must be improved as the County installs more on-line computer systems and departments require constant access to computers to perform their daily tasks. Examples include the new Municipal Court and CAPS systems. Interruptions to computer access will severely restrict the ability of the County to support the public. The relocation of the Data Center offers the opportunity and the challenges to improve on service and prepare for future needs. Teleconferencing is just one of the many applications that must be planned for. The data communications network under consideration will meet those needs and provide a significant improvement in reliability over the present data network. The distinction between voice and data will become less distinct as hardware is installed capable of supporting both mediums of communication. The recent reorganization within the Information Systems function that placed the TSD and part of the Data Systems Division in a newly-created division recognizes this migration.

TELEPHONE SYSTEMS PLANS:

- Reduce the cost of providing telephone and data communications.

- Reduce the mean time between failure and mean time to repair data circuits.

- Provide consistent times to implement Telephone Service Requests (TSR's) for data circuits.

- Improve ratings on user satisfaction surveys.

- Reduce the OCTNET billing cycle time.

- Provide customers regular feedback on the status of TSR's.

- Improve the coordination between Telephone and Data Systems on data circuit installations and troubleshooting.

- Complete implementation of voice mail in the Civic Center.

- Implement a formal disaster prevention and recovery plan for OCTNET.

This page intentionally left blank

INFORMATION SYSTEMS TACTICAL PLANS
DATA SYSTEMS

INTRODUCTION:

The Data Systems Division consists of the OPERATIONS SECTION and the TECHNICAL SUPPORT SECTION. Together, these two sections are responsible for the operation, maintenance, and support of the County's Data Center and the hardware and system software which comprise that data processing environment. The County currently contracts with Martin Marietta Technical Systems Inc. (MMTSI) to perform the day-to-day functions associated with these activities. Responsibilities include:

- Planning and strategic direction for services and operation of the Data Center;

- Planning the efficient and productive use of hardware technologies and Data Center space;

- Planning telecommunications projects and standards;

- Developing capacity, facility and disaster recovery plans;

- Monitoring the performance of Martin Marietta Corporation (MMC) in the day-to-day operation of the Data Center to ensure consistent and adequate levels of service to the users and assisting and making recommendations to MMC on the day-to-day operations of the Data Center;

- Monitoring the operations of the computer equipment in the Data Center by MMC to insure that it is consistent with County schedules, policies, procedures, and contractual requirements;

- Providing technical support and expertise in the areas of system software, database administration, system security, and telecommunication network management for the IBM and Unisys mainframes;

- Developing and maintaining system security access controls and standards; and

- Developing guidelines and procedures to assist departments in the development of plans for departmental data centers and automated systems.

CURRENT ENVIRONMENT:

Data Center: The existing Data Center is located in the basement of the Engineering/Finance Building in the Civic Center. The facility has been expanded to its maximum potential, extensive controls have been installed to provide physical security, and where possible contingency plans have been developed to address potential disasters which would affect data center operations. The facility operates 24 hours per day, seven days per week, 365 days per year. The total investment in computer-related hardware is approximately $45,000,000.

The data processing support provided to the County departments by the Data Center is divided into three main segments: IBM mainframe, Unisys mainframe, and Tandem department minicomputer. In addition, outside agencies are establishing connections with their departmental systems to the Data Center platforms at an accelerated rate.

IBM Mainframes: The IBM mainframe configuration consists of one IBM 3090-300J, currently running at 45% capacity, and two IBM 4381-P13 processors. The processors are used

for systems in production, end-user computing and development/testing respectively. There are 176 Gigabytes (GB) of disk supporting the various systems and applications software and databases for the user departments. The principal IBM systems users are the Social Services Agency, County Clerk, Assessor and Environmental Management Agency. In all, this complex supports over 2,314 IBM terminal devices directly connected to two IBM 3725 and one IBM 3745 communications processors. The IBM systems can also be accessed by Unisys terminals. The graphs in Attachment A illustrate the growth in CPU utilization interactive response times and IBM transactions, and other measures of activity.

Unisys Mainframes: The Unisys mainframe configuration consists of one Unisys 2200/426 dedicated to the Sheriff-Coroner processing, one Unisys 2200/427 for all other online user applications and one Unisys 2200/414 for all batch processing. There are 84 GB of Unisys M9720 disk storage. The principal Unisys resource users are the General Services Agency, County Clerk, Auditor-Controller, Marshal, Assessor, Municipal Courts and Sheriff/Coroner. The Unisys configuration supports over 1,642 terminal devices directly connected to the four Unisys DCP/40 communications processors. A DCP/30 is dedicated to connecting the Unisys and IBM mainframes. These Unisys systems were dramatically upgraded within the last two years and have sufficient capacity to meet current and future anticipated requirements provided that the Auditor-Controller and Municipal Court systems currently on Unisys are replaced on schedule with new systems on the IBM.

Tandem Minicomputer: The Tandem department minicomputer system located in the Data Center is dedicated to the County Library System.

Storage: The Data Center provides on-site storage for approximately 25,000 reels of magnetic tapes and 14,000 cartridge tapes. Further tape storage is provided for disaster recovery at an off-site vault in the Fruit Street complex for approximately 4,000 tapes and cartridges. The Data Center also utilizes a commercial off-site storage service for the storage of weekly backup tapes and other information that may be required in the event of a disaster.

Microfiche and Printing: The Data Center produces on-line/off-line microfiche and laser and impact-printed reports that are delivered to the users each day.

GROWTH AND CHANGE FACTORS:

• IBM Mainframe Environment

For the next three to five years, all County agencies' major applications development plans except for law enforcement will continue to migrate from Unisys systems to IBM mainframe systems. Seven agencies are now in the process of developing or planning for new systems that are projected for installation on the IBM systems.

Direct Access Storage Device (DASD) requirements for the Agricultural Commissioner, Auditor-Controller and Personnel (CAPS), Environmental Management Agency, Courts' systems, Tax Collector, and Social Services Agency will require a total increase of 96 GB of storage within the next two years and will add a significant processing demand to the IBM mainframes. This increase is due to the combination of newly-automated functions, the increased amount of online applications and the large incremental increases in the terminal population installed to support applications and for accessing the end-user computing functions such as electronic mail. This growth will be superimposed on the normal growth of current applications and end-user computing.

In typical organizations, the anticipated annual compounded growth rate in data storage requirements is approximately 40 percent per year. In Orange County, the growth rate has been 44 percent per year since the first IBM mainframe was installed in the summer of 1985. We expect the growth to begin to level out to a lower rate in 1992 and expect a need for 550 GB in 1995.

There will be a similar demand for increased processing capacity on the IBM systems. The current 3090-300J will be replaced with an IBM 3090-400J or similar class mainframe before the move to the new Data Center in late 1992. Current capacity planning indicates that by the end of FY 1993-1994 the mainframe will be operating at 70 percent of capacity. Planning for its upgrade or replacement with a new technology processor must then be in progress.

The Data Center will continue to meet increasing demands and more stringent production schedule deadlines. This will be accomplished through continuing efforts to automate the operation of the Data Center. The automation of the scheduling system is now in process and will be fully functional by the end of 1991.

To handle the large amount of printed reports, the Data Center is in the process of implementing a Report Distribution System. This unique data base will retain specific handling, bundling and print schedule criteria respective to each report currently produced in the IBM environment. Additional features include the capability for users to view reports online from their agency locations prior to report delivery and the ability to reprint the report if necessary. The goal is to increase service by making information more readily available, but at the same time reduce the requirement and cost related to paper and labor.

- ## *Unisys Mainframe Environment*

The main growth in the Unisys environment will be the growth in demand for Sheriff processing. The forecasted new systems for the Sheriff coupled with major rewrites of the current Criminal Justice and warrant services systems, will consume the available resources that exist today. The relative timing of the migration of non-Sheriff Unisys systems to the IBM environment and the growth of the Sheriff's demand will be critical in determining the need for additional Unisys processing and storage capacity. The development of the new Municipal Court System and Countywide Accounting and Personnel System (CAPS) on IBM to replace Unisys systems should free up resources and provide needed Unisys growth capacity for two-three years.

Currently, the large majority of the application and print processing activity resides on the Unisys environment. The use of the existing communication link between the IBM and Unisys processors will be expanded to allow Unisys shared access to the IBM automated operations products.

- ## *Disaster Recovery and Security*

The new Data Center will provide greater security and environmental controls which will reduce the probability of water and fire threats as well as earthquake damage. Additional telecommunications switching capabilities will allow for greater levels of off-site recovery.

Interdependence of departmental computer systems and Data Center systems will require coordination so that operational requirements and procedures are consistent. Technical Support plans for departmental planning will be needed. Support for local departmental contingency planning procedural development will include emergency procedures for daily operation, risk analysis, physical and data security analysis, and backup/recovery rotations.

FUTURE ENVIRONMENT:

- ### *New Data Center*

The construction of the new Data Center is over 50 percent completed and anticipated occupancy is October 1992. The new Data Center will be approximately 60,000 sq. ft. and will be located at the County Operations center located at Grand and McFadden. It will incorporate the most current earthquake tolerant design. This will protect the delicate computer and communications equipment as well as the life and safety of the staff. The facility will be capable of sustained operation during the majority of anticipated disaster scenarios. Disaster recovery plans will be in place and periodically exercised. Reciprocal processing agreements with other public agencies will be established and periodically tested.

In addition, space in the new Data Center will be made available to agencies and departments for their departmental system computers. This will provide an optimum computing environment for these processors (e.g., air conditioning, power, raised floor) while at the same time providing the security, operations support, emergency back-up, that is provided for the County mainframe computers.

The continuation of Data Center support for online applications during most disasters will be facilitated by the multi-path design proposed for the communications network, using OCTNET multi-path, multiplexed microwave channels. It will also be served by the Pacific Bell public telephone network for limited voice and data communications backup. Public network communications will also be provided to the remote disaster recovery contingency sites.

- ### *IBM Mainframe Environment*

Within three to five years, the new and expanded application systems detailed above will be in operation. More than 60 percent of that work will be running as a normal workday. That amount of work plus the need for greater system stability and the kind of DASD that will be acquired will dictate the next processor and operating software. The best and planned solution is a logically partitionable machine with sufficient capacity on one side to run all production and enough capacity on the other side to run test and double as a hot standby in case of problems with the production side. Storage, real memory, extended storage, cache, DASD, and tape will be handled in a semi-automated manner through System Management Storage (SMS). The communications network will experience substantial growth during this time. A doubling of the terminal population to 6,000 to 7,000 is probable.

Database applications will remain on DATACOM/DB. The end-user computer will have significant additional users added to the system to take advantage of OfficeVision (PROFS) and automated forms. Much of this added activity will result in a modest growth of CPU utilization since this activity is more input/output (I/O) than processor intensive. The present 4381 has large amounts of available capacity to accommodate growth in this area and DASD requirements to support this growth should amount to about two 3380-K disk devices.

Computer operator interaction will be decreased on the IBM systems as a result of increases in the proportion of online systems and database-driven applications. Additionally, operator support tools such as NETVIEW automated operation type capabilities, the Control-M scheduling package and the use of cartridge tape loaders will further reduce the operator workload.

The DASD environment will grow substantially, but based on past experience, the "footprint" required should remain comparatively constant. From 1985 to 1991, the

28

County increased DASD by a factor of nine, while at the same time decreasing the footprint required for storage by a factor of ten. If the County invests in current technology hardware, the computer room floor space requirements should remain relatively constant. ·

As previously stated, by the end of FY 1993-1994, the Data Center will need to be planning for the replacement of the processor that was installed in 1991. Depending on IBM's corporate direction and the County's processing requirements, this replacement may be as simple as a product line upgrade or as complex as a completely new technology processor complex.

- ### *Unisys Mainframe Environment*

For the next three to five years, the Data Center will continue to operate three Unisys 2200 mainframes. One mainframe will support systems software requirements to enable complete testing of all software prior to implementation. This same machine will be used to test new programs for the Sheriff's Department and to provide a backup for the Sheriff mainframe.

The second mainframe will continue to support the current Sheriff environment. It will also support any new system(s) or enhancements to already existing systems that the Sheriff deems necessary for production. The Marshal's Office Warrant Bureau, five Municipal Courts, County Clerk, and other departments having access to the Sheriff database currently, will continue to require access to this processor.

The third mainframe will be used to support all non-Sheriff processing not converted or replaced by a system on the IBM mainframe. GSA/COINS (Common Inventory System) processing will continue to process on the Unisys 2200 mainframe. Should the implementation of projects in process slip (CAPS, Assessment Tax System Phase II and III, and Municipal Courts System), the Unisys systems which they will replace will continue to process on the Unisys 2200 mainframes.

There are a number of automated operations products installed on and used in support of the IBM mainframes. The new Communication link between processors will allow the Unisys environment the opportunity to take advantage of these automation products.

The resource requirements to support the Unisys environment three to five years from now will be dictated by the Sheriff's processing requirements. This presupposes that migration continues and no new development is performed on the Unisys machines. Online transactions will increase from present levels to support the Sheriff's applications. DASD utilization will also move up slightly above the present requirements but can be accommodated with existing devices, barring any unforeseen changes in growth. In order to control growth in the Unisys environment, departments running applications on the Unisys mainframes must pay close attention to their disk space allocations and keep only that data that is needed on disk.

- ### *Telecommunications*

The County will experience high growth in interconnection with departmental minicomputer and Local Area Network (LAN) based processing systems. These departmental systems include IBM and Unisys gateway connections to provide end-user access and exchange of data. Departmental system technology will conform to GSA/Data Systems specifications to ensure the ability to interconnect with mainframe systems.

Token Ring technology attached directly to the IBM 3090 and 4381 processors is being tested for future LAN connectivity. The high capacity benefits of the Token Ring combined with OCTNET facilities will allow user agencies to transfer data at a higher rate than is currently available. Large numbers of high volume users can be connected to the

Data Center via the Token Ring LAN and reduce the cost for data communications hardware in the Data Center.

DATA SYSTEMS PLANS:

- ### Hardware Acquisition

  Establish a long-range, three-to-five year acquisition and replacement plan for the Data Center's mainframe computer and major peripheral components such as direct access storage devices (DASD), printers, microfiche and tape drive systems. This plan will be based on detailed capacity projections that anticipate system growth and new development.

  Establish a Data Center hardware replacement fund to finance hardware acquisition. Annual funding should be based on the long-range acquisition and replacement plan. The goal of this funding mechanism is to annually set aside money needed for future computer hardware so that a relatively constant level of funding can be budgeted rather than periodic large budget requests in the year of acquisition.

- ### Automated Operations

  Continue to implement automated operations systems which will reduce operator load, enhance productivity and eliminate operator errors. Examples of these automated operation products include:

  - Netview - which provides the capability of real time and statistical analysis of the IBM data communication network performance.

  - ACO Solutionpac - which has been tailored for our Data center to automatically open and close production and test CICS regions within the IBM environment.

  - Control System software products - which work within the IBM environment to provide the following automated operations capabilities:

    M - Scheduling, job dependencies and prerequisites.

    R - Restart. Automated responses to job aborts and error codes.

    D - Distribution. Online viewing of reports bundling of products for distribution.

    P - Remote printing products.

  - SNA/RJE (or other similar software) - which would facilitate host to host system communications between the IBM and Unisys mainframes. This potentially would allow use of automated operations software available on the IBM to be used to automate the functions of the Unisys mainframes.

Analyze the potential benefits of Automated Cartridge Library Systems featuring robotics. These systems reduce cartridge mount times from an average of 2.25 minutes to 30 seconds and yield substantial savings in operator workload. This product would also make available to other County agencies online direct vaulting and Disaster Recovery backups to the Data Center's off-site vault storage facilities.

- *Printing*

    Increase emphasis on the use of electronic forms imaging and other enhanced printing features made available with the Xerox laser printers installed in mid-1990. Data Systems plans to offer a new mailer service where blank forms will replace the high cost of premanufactured special forms. There is a new ZIP code system with ZIP+4 collating and bundling features is now available.

    Use new technology to reduce the growth rate for printed products in the future. New technology printers that were installed earlier this year offer the capability of printing up to four pages of data on a single page. System software products are in the process of being implemented and tested which will facilitate online viewing and printing of reports at user sites.

- *Service Levels*

    Research, budget and plan the implementation of IBM's System View. This system replaced and supersedes the problem, configuration, network and performance management functionality of the CRISS system which is not vendor-supported or County-owned software.

    Use Civic Center Voice System to aid and provide better Help Desk network assistance to the user community.

    Explore the possibility of expanding the size of the prime shift window which currently runs from 8 a.m. to 5 p.m. with noon as lunch hour. By widening this window and spreading lunch across different times, it may be possible to spread the workload more uniformly across the day (i.e., eliminate the high activity times of 10 a.m. and 2 p.m. and eliminate the noon to 1 p.m. dip in utilization).

    Implement the following service level goals to provide an enhanced level of availability, improvements in response time, and eliminate network and unscheduled storage outages ("Harden the Systems"):

    - Maintain the operating systems in as unchanged a state as possible. Introduce local code/modifications on an exception basis only;

    - Keep unscheduled downtime as low as possible with zero being the goal;

    - Establish a no-recycle policy for the CICS regions (they will be up all the time);

    - Create a backup system for the Sheriff's applications;

    - Establish commonality across like platforms that are supported to reduce the amount of unique effort required for support (e.g., the 4381 VM environment will clone that of the DA's 9370 VM operating system environment which is supported by the Data Center);

    - Automate routine and repetitive processes of the IBM and Unisys systems by using the recently-acquired performance tuning and capacity planning software;

    - Prevent the acquisition of multiple software packages that perform like functions; and

    - Establish, with the customers, a more efficient communications network.

- *Database*

  Establish enforceable standards and commonality across like sites for database applications to reduce unique effort required for support.

- *User Productivity*

  Expand the use of dial-in access to the Data Center computers. Options are being explored that will satisfy the needs of the users without compromising security needs. For example, one option with no security exposure on the mainframes, involves off-loading desired data from the mainframe onto a stand-alone PC.

- *Security*

  Complete a standardized set of policies and procedures governing the way data security is performed in the IBM mainframe environment. This will ensure greater stability for applications which follow these practices, result in consistency of security practices across applications, and will exceed the requirements of internal auditors. To this end, standardization of the "front end" software that provides user access screens and uses Resource Access Control Facility (RACF), the IBM security system, has begun.

- *Telecommunications*

  A planned effort will be made to evaluate the Civic Center fiber ring surrounding the Civic Center plaza. Data Systems will determine the cost to retrofit this fiber link to a state of the art (IEEE Standard) FDDI communication service offering smaller (PC only) agencies electronic vaulting and Local Area Network (LAN) connectivity to the Data Center and other mini computer-based systems.

  Token Ring technology with direct channel connection to the IBM 3090 and the 4381 processors will be installed on a platform basis. Data transmission rates up to 16 Mbps will become available to support end user equipment. This high data transfer capability will be closely linked to OCTNET facilities.

INFORMATION SYSTEMS TACTICAL PLANS
DATA SYSTEMS CUSTOMER SUPPORT

INTRODUCTION:

Data Systems Customer Support consists of the SYSTEMS AND PROGRAMMING SECTION, the SYSTEMS PLANNING SECTION, and the END USER COMPUTING SECTION. Together, these sections are responsible for providing consultant and advisory services to the agencies and departments, for developing and maintaining mainframe applications, for coordinating Countywide data systems budget and planning efforts, and for providing end user support services. Responsibilities include:

- Developing information systems strategic plans;

- Analyzing and preparing the annual Countywide Information Systems budget;

- Developing and maintaining Countywide Information Systems policies, procedures and standards;

- Providing systems analysis and mainframe applications programming support to user departments;

- Maintaining and enhancing existing mainframe applications systems;

- Providing advisory and consultant services to County agencies and departments;

- Providing direction, standards, and guidelines in the use of end-user computer applications and systems;

- Coordinating the use of mainframe end-user products;

- Providing a Countywide training program in computer technology, and the use of computer hardware and software;

- Providing a coordinated program of microcomputer hardware, LAN installation and maintenance services; and

- Coordinating master contracts for the acquisition of microcomputer hardware, software, and peripherals (computer store contract, software master contract, etc.).

CURRENT ENVIRONMENT:

- *Overview*

    The information processing environment that is supported by Data Systems Customer Support is complex, diverse, and is characterized by continual and accelerating change. It consists of mainframe applications, departmental systems (networked PCs, mid-range/mini- computers), and PC resources.

    Mainframe applications: There are currently 184 mainframe applications which run on the IBM and Unisys mainframes in the Data Center and many of the County agencies are currently involved in major application system development (e.g., Countywide Accounting and Personnel System, Municipal Court System). There are also 600 users in 17 departments which have access and user IDs to use the mainframe end user

products, i.e., OfficeVision (PROFS), DW370, SAS and MAPPER.

Departmental Systems: There are currently 92 departmental systems (41 LANs, 51 departmental systems) installed in the County, and a number of departments are in the process of acquiring and/or expanding these systems; many agencies are expanding the use of both mainframe and local systems. Attachment A, Figure 9 illustrates the historic growth and future projected growth of departmental processors.

Microcomputer Resources: There is an estimated total of 4,000 microcomputers, many of which have mainframe or departmental processor access, in use in all County departments. Attachment A, Figures 10 and 11 illustrates the historic growth and future projected growth of microcomputers and local area networks.

- **Services**

The processes by which information systems acquisitions are made and by which application systems are developed are likewise complex and time-consuming. An integral function of Data Systems Customer Support is to provide the variety of consultation and support services that assist agen⁻ :s/departments with the acquisition of new systems, development of new systems, and ι. of systems. These include the following:

Consultation Services: The types of consultation services provided directly by staff or by staff coordinating with vendors, encompass the following:

Hardware/software selection: This includes but is not limited to needs assessments; development of specifications; identification and evaluation of alternatives; preparation, review and/or approval of purchase requests; support issues; and maintenance.

Training and training plans: This includes but is not limited to needs assessments; course modification and development; identification of training resources; selection of courses and/or training resources; and development of standard or customized schedules.

LAN design: This includes but is not limited to needs assessments; development of specifications; identification and evaluation of alternatives; and identification of required implementation and ongoing support.

Applications design and development/acquisition: This includes but is not limited to needs assessments; review of RFPs and resultant proposals; preparation, review and/or approval of purchase requests; management of systems development projects; implementation of new hardware and/or software systems; and modifications and/or expansions of existing systems.

PC hardware/software acquisition: This includes but is not limited to needs assessments; development of specifications; identification and evaluation of alternatives; preparation, review and/or approval of purchase requests; computer store contract; software master contract; support issues; and maintenance.

Technology updates and information: This includes but is not limited to scheduling technology days; vendor demonstrations; and distribution of technical literature which provides technical information, product evaluations and product comparisons.

Mainframe Applications Systems

Twenty-four new applications systems, comprising about 3,215 programs, were installed over the last four years and an additional 26 systems were migrated from Unisys hardware to IBM hardware, with numerous improvements (such as Superstructure

processing) incorporated in the process. This group of 50 systems is in generally excellent condition.

The majority of the remaining systems in the Data Center are old and in poor condition. Some were developed over 20 years ago and have been modified repeatedly by many different programmers over the years. This increases the complexity of the maintenance efforts as numerous patches to programs make the logic flow obscure and time-consuming to analyze.

Mainframe End User Applications

Electronic Mail System: Electronic mail in the County currently exists on one of two platforms: the IBM Mainframe (OfficeVision -- PROFS) and departmental systems (e.g., DEC All-IN-1, Unisys Q-Office, Wang Office). Users of OfficeVision (approximately 650) are currently exchanging electronic mail across departments and geographical locations. Users of departmental systems, with few exceptions, are able to exchange electronic mail only within their own organizations. The exceptions are departments using IBM departmental systems and departments using the Hall of Administration Digital system (the result of a pilot project initiated in 1990/91 which allows users of the Hall of Administration DEC All-IN-1 environment and the PROFS environment to exchange mail in "native mode" using a County-standard nickname format).

Electronic Forms Processing: As an adjunct to electronic mail, a pilot project to provide for the completion and electronic transfer of County forms within the OfficeVision (PROFS) framework was conducted during 1990/91. As a result, the Computer Access Authorization Request Form has been automated and requests may be electronically issued, processed and tracked.

Online Documents: As a further adjunct to using electronic mail, a pilot project to place a County reference document on the IBM mainframe was conducted in 1990/91. As a result, the *OCTNET Directory* is on the IBM mainframe where it is available to all OfficeVision users and is updated monthly. A second project in process is to place the *Information Systems Policy, Standards and Procedure Manual* online.

End User Support Services

Training Program: The current training program consists of:

- Classroom training in the use of microcomputer hardware/software which is provided by vendors and charged back to the users;
- Classroom training in the use and maintenance of DEC departmental systems which is provided by the vendor and charged back to the users;
- Brown Bag Academy sessions which focus on technical topics and are provided at no charge by various vendors;
- Technology Days which focus on product information and demonstrations and are provided at no charge by various vendors; and
- User groups which are chaired and conducted by the member departments.

Microcomputer Maintenance Services: End User Computing has a staff of factory-trained and authorized microcomputer maintenance technicians who troubleshoot and repair standard microcomputers and peripherals for County agencies/departments. Repairs are done by staff or done through a time and materials arrangement with vendors. By special arrangement with the Computer Store vendor, the technicians also perform diagnostics for equipment under warranty and provide courier service to take equipment to the vendor for repair.

Local Area Network (LAN) Maintenance Services: End User Computing is finalizing a master contract with GTE/Contel to provide maintenance services for the County's local area networks.

Local Area Network (LAN) Acquisition and Design Services: End User Computing is finalizing a master contract with GTE/Contel to design and acquire local area networks for County departments.

Computer Store Contract: End User Computing currently administers a master contract with JWP/Businessland to provide standard microcomputer hardware, peripherals, and software at pre-negotiated discount rates off current list price. Value-added services provided through the contract at no additional charge include: management reports, hardware and software registration, uniform warranty service per system commencing at date of installation, system configuration, and system design.

GROWTH AND CHANGE FACTORS:

- ### User Community

Much of the scope and workload of Data Systems Customer Support results from the agencies/departments plans for, implementation of, and use of information technology to meet their functional requirements.

Almost without exception, the County agencies have expressed interest in or have firm plans in the areas of:

- Developing new mainframe applications systems or major expansion of existing ones
- Acquiring or expanding departmental systems for office automation (OA).
- Connecting those OA systems to the County mainframe to exchange electronic mail and electronic forms.
- Acquiring or sharing in optical disc storage and retrieval capability.
- Acquiring additional microcomputers.
- Expanding the use of Local Area Networks (LANs).

Most County agencies are awaiting direction to satisfy their need for technologies such as:

- Data entry from the field via the telephone or hand-held computing devices.
- Use of decentralized touch-screen type terminals for public inquiry.
- Distribution of County disbursements (e.g., welfare warrants) via ATM-type terminals.

- ### Technology changes

The technological changes are characterized by increased power, speed, memory and storage on desktop workstations, increased cross-platform connectivity and communications capabilities, new and improved software on all platforms, increasing numbers of off-the-shelf application programs, multi-media integration (voice, video, data), new and improved storage and retrieval hardware and software, and new and improved applications development software, graphics capabilities.

DATA SYSTEMS CUSTOMER SUPPORT PLANS:

The future will be one of continuing change as the agencies/departments struggle to serve the public in an era of dwindling resources. The use, and the acceleration of use, of information systems and technology in general is essential if the County is to make progress in dealing with its multitude of problems. Rapid advances in information technology will continue to offer new

alternatives and will dramatically influence how business is conducted. Of particular significance within the information processing field are the following: rapidly changing technology which is placing increasing power on desktops at decreasing prices; the trend towards decentralization of information systems; and industry efforts and announced directions to allow communication and data exchange across the multitude of computer hardware/software platforms. The future plans of the Data Systems Customer Support Division include the following:

- ***Standards***

  Collaborate with all involved parties to develop comprehensive, yet usable standards and procedures governing all phases of the applications development life cycle.

  Coordinate with the Information Systems Managers' Forum (ISMF) to establish, publish and maintain a standard or set of standards for the acquisition, development and use of data processing hardware and software in the County. The primary purpose of establishing and maintaining the standards identified below is to provide a stable, predictable environment to meet short-range and long-range needs and goals of County agencies and departments in the most cost-effective and cost-efficient manner possible. As technology and user requirements advance, other areas requiring standards will be identified and established. The primary goal is to select the minimum number of hardware vendors and software packages that support County computing requirements and provide necessary compatibility across the micro-, mini-, and mainframe platforms. Examples of standards include the following:

  - Basic systems architecture
  - Applications development life cycle
  - Information systems acquisitions and projects
  - Communications hardware/software
  - User directories on departmental and mainframe systems
  - Microcomputer hardware/software
  - Local area networks (LANs)
  - PC-mainframe document transfer

- ***Systems Development Process***

  Evaluate and pursue alternatives and resources that will be beneficial to the County's system development process, including the following:

  - Automating Automation: The development of customized applications systems is usually an extremely expensive process and recent development projects at the County have confirmed this. It is not unusual for a development project to cost several million dollars. In almost every case, the development process can be speeded up, and made much more predictable and reliable, through the use of automated tools. Software packages are available that address such areas in the development process as project estimating and planning, requirements analysis, system design, source code generation, testing and documentation.

  - 4GL: Acquire an end user 4GL (fourth generation language) to be used as a tool to allow universal access to data, regardless of where the data is stored and the ability to perform ad hoc queries against this data. This tool will also be used to perform migration/conversions of existing MAPPER applications to the IBM environment.

  - Information Systems Architecture: This concept calls for standardization of the way users interface with systems; the way systems interface with each other, the computer hardware and software, and communications devices; and providing a consistent "look and feel" to the user regardless of what system he/she is using.

- Package Acquisition Versus Custom Development: The County has been successful in acquiring existing application systems and installing them for County users. Some examples are the Case Data System (CDS), GAIN Information System (GIS), Social Services Reporting System (SSRS), Clerk of the Board Information System (COBIS), and Docketrac. Although this approach is sometimes met with resistance by users, because there is often a need to modify their operations or procedures to match the package, in most cases it is more than offset by the cost benefits.

- User Support: While the use of microcomputers and departmental systems is expected to continue to proliferate, the demand for support of centralized systems is also expected to increase. The smaller and more highly specialized systems will move out of the Data Center and onto microcomputers or departmental minicomputers. This proliferation of microcomputers and departmental systems has the potential to require support from a central staff and the demand for downloading and uploading of data between departmental and central systems will dramatically increase. In addition, the systems that remain in the Data Center will be those that are more complex, have larger data storage requirements or which are shared by different users.

- Quality Assurance: The increasing backlog of applications maintenance and development requests within the County will necessitate the use of such computer-assisted processes as computer-aided software engineering (CASE), and computer-assisted testing and implementation (CATI). The thrust of the quality improvement program will be to review existing processes and procedures and revise them or develop new ones as required.

• *Training*

Expand the training program to encompass alternative methods of training and to include technical as well as user topics. Contracts for classroom training in support of other departmental systems and mainframe end-user application programs (e.g., PROFS, DW370, SAS) will be implemented wherever feasible. Other training mechanisms that are being explored include interactive computer or video-based training to supplement the classroom or stand-up approach, a Training Coalition to provide training using County staff, and Training Coalitions to provide specialized and technical training for systems support staff (e.g., on-site training, host-site partnerships with technical trainers).

• *PC Application Library*

Develop a Countywide PC application library. At the present time, departments develop applications using off-the-shelf PC programs like dBASE and Lotus. These are generally characterized by limited or restricted use by a department, lack of documentation, and high dependence on the developer for support. Frequently, these applications cease to be used when the person who developed it transfers to a different assignment. Due to the large number of similar activities within County departments, it is generally recognized that there is duplication of effort in this area of application development. To maximize the use of these applications, an effort will be made to create a mechanism for sharing them across departments. This will require a committee approach to inventory existing applications, to assess department interest in sharing these applications, to establish documentation guidelines, to identify and establish support guidelines/ procedures, and to establish a mechanism for making them available to other County users.

• *Electronic Mail System*

Coordinate with Technical Support to establish a Countywide electronic mail system to allow use of the existing electronic mail systems in a manner transparent to the users. The goal of a Countywide electronic mail system is to interconnect the variety of electronic mail systems in a

manner that is transparent to the user, to expand the functionality and number of users on the central PROFS systems, and to add document transfer as a universal feature regardless of platform used. As a result of a pilot project initiated in 1990/91, users of the Hall of Administration DEC All-IN-1 environment and the PROFS environment now exchange mail in "native mode" using a County-standard nickname format. Based on the success of this project, priority will be given to acquiring software necessary to allow this capability among all IBM, DEC, Unisys, and Wang office systems users.

- ### *Electronic Forms Processing*

As an adjunct to electronic mail, a pilot project to provide for the completion and electronic transfer of County forms within the PROFS framework was conducted during 1990/91. As a result, the Computer Access Authorization Request Form has been automated and requests may be electronically issued, processed and tracked. In the future, users will be able to initiate requests for such services as telephone services, Facilities Operations work requests, Data Systems work requests, purchase requests, printing and graphics requests. Departments will also be able to create department-specific forms within mainframe space dedicated to their use. They will then be able to transmit these requests (forms) through the necessary approval steps within their respective departments, transmit them to the appropriate service department and check status of their requests. The service departments will likewise be able to process the forms, direct the work assignments and work flow through their respective sections, and communicate status and/or completion to the requesting departments.

- ### *Online Documents*

As a further adjunct to using electronic mail, a pilot project to place a County reference document on the IBM mainframe was conducted in 1990/91. As a result, the *OCTNET Directory* is on the IBM mainframe where it is available to all OfficeVision users and is updated monthly. A second project in process is to place the *Information Systems Policy, Standards and Procedure Manual* online. In the future, other Countywide documents will be placed on the mainframe to allow easy updating for the "owner" departments and easy look-up and printing capabilities for all departments. Likely candidates for this type of document availability include MOU's, Personnel and Salary Resolution, County budget, administrative procedures, purchasing procedures, reprographics procedures, and Auditor-Controller procedures. Departments will also be able to create department-specific documents (e.g., internal procedures, directories, schedules) within mainframe space dedicated to their use. By expanding this capability to include publishing capabilities, it is feasible that document production, updating, and access will all be available through the mainframe in the future.

This page intentionally left blank

AGENCY/DEPARTMENTAL PLANS

Agricultural Commissioner
Assessor
Auditor-Controller
Clerk of the Board
Community Services Agency
County Administrative Office
County Clerk
County Counsel
District Attorney
Environmental Management Agency
Fire Department
General Services Agency
Health Care Agency
Integrated Waste Management
John Wayne Airport
Marshal
Central Municipal Court
Harbor Municipal Court
North Municipal Court
South Municipal Court
West Municipal Court
Personnel
Probation
Public Defender
Recorder
Retirement Office
Sheriff-Coroner
Social Services Agency
Superior Court
Treasurer-Tax Collector

This page intentionally left blank

AGRICULTURAL COMMISSIONER

Current Computing Environment

- Several State-provided application packages running on a small minicomputer for automating the Agency's Trapping Program, Restricted Material Permit Program, Apiary Program, Gypsy Moth Program and Mailing Lists.

- Limited word processing, spreadsheet processing, database management and state reports processed in the department.

- Two small to medium size applications processed in the County Data Center for Weights and Measures Inspection and Billing and the Annual Crop Survey.

Mainframe Computing Plans

- Migrate the Weights and Measures systems from the Unisys to the IBM processing environment.

Departmental Computing Plans

- Continue to automate State mandated reporting on newly acquired microcomputer.

Advanced Technology Plans

- Utilize the telephone and hand-held-devices to input data from the field.

- Expand the office automation system to provide word processing, calendaring, electronic mail and operation automation to all agency personnel.

- Participate in County projects for utilizing voice mail, electronic forms and electronic mail.

ASSESSOR

Current Computing Environment

- IBM mainframe-based property assessment systems running in the County Data Center. Systems include functions required to produce the secured and unsecured assessment rolls.

- Small number of Unisys-based programs which have not yet been migrated to the IBM 3090.

- Departmental DEC minicomputer system used for parcel mapping and a FileNet Image Processing system used for storage and retrieval of various property-related documents. Both located in the Finance/Engineering Building.

- Numerous personal computers (PCs) used for assessment support functions, spreadsheets, and word processing.

Mainframe Computing Plans

- Migration of remaining Unisys-based processing to the IBM 3090. Functions to be migrated are miscellaneous stand-alone jobs and jobs which interface to other department Unisys systems.

Departmental Computing Plans

- Department-wide local area network to link existing personal computing networks, the VAX network and a gateway to the IBM 3090. This network would provide greater information flow throughout the department and result in better service to the public.

- The use of DATACOM/PC and IDEAL/PC on a local area network to off-load some software development and testing from the more expensive mainframe environment.

Advanced Technology Plans

- Provide hand-held microcomputers to the appraisal staff in order to electronically capture data in field and transfer the information, via telecommunications, to County Data Center for updating the Assessment/Tax System (A/TS) database.

- Provide public access to A/TS information at public service counters using touch screens. An interactive computer-based system to allow the public viewing of information using menu-driven, touch-screen terminals.

AUDITOR-CONTROLLER

Current Computing Environment

- Over 40 Unisys mainframe-based accounting, payroll and property tax systems running in the County Data Center. Systems are batch-oriented systems that average over 15 years in age.

- Numerous personal computers (PCs) used for word processing, spreadsheet and other office automation applications. Many of the departmental PCs are being used for administrative and financial application systems such as the County general fund cash requirements forecasting; municipal fees and fines tracking; lease schedules; Gann compliance tracking.

Mainframe Computing Plans

- Implementation of American Management Systems's (AMS) Government Financial System (GFS) and Government Human Resources System (GHRS). The GFS and GHRS systems will run on the County's IBM 3090 computer and will replace the current Unisys-based general accounting, purchasing/inventory, cost accounting, and payroll/personnel systems. Implementation will be phased in over the next two years.

Departmental Computing Plans

- Purchase and implementation of a "turnkey" collections system to replace the current Unisys MAPPER-based system. The new system will process payments, terms, billings, delinquencies, dunning statements, and provide management decision support information.

Advanced Technology Plans

- Expand use of office automation technology such as E-mail and local area networks in order to improve timeliness of information exchange between accounting teams, general accounting and agencies/departments.

CLERK OF THE BOARD

Current Computing Environment

- IBM 3090 mainframe-based Clerk of the Board Index System running in the County Data Center. Systems provide online search capability of official Board actions.

- Hall of Administration (HOA) DEC computer system used for wordprocessing, spreadsheet and other office automation applications.

- Several departmental personal computers used for various administrative tracking systems, desktop/graphics capabilities and office automation applications.

Mainframe Computing Plans

- Enhance COBIS (Clerk of Board Index System).

Departmental Computing Plans

- Upgrade the HOA DEC VAX to support additional users and applications, such as the Agenda Item Tracking System under development.

- Implement the Agenda Item Tracking (AIT) System developed for the HOA DEC VAX computer. System will automate the Board of Supervisors' agenda item transmittal, filing and querying functions.

- Develop, on the HOA DEC VAX computer system, various administrative application systems such as: resolutions/minutes; ordinance distribution; license/contracts renewal tracking and claims management.

- Evaluate implementation of Records Storage and Retrieval System for the Clerk of the Board records based on an image processing system to allow widespread, quick, random access to official County documents.

Advanced Technology Plans

- Provide public access to information at the HOA foyer by using touch screens in an interactive system to allow public and press viewing of Boards, Committees and Commissions actions and announcements.

- Use automated telephone answering system to screen and direct calls to appropriate individuals. General information inquiries would be handled using touch-tone phones to answer a series of questions and give responses generated by a computer-voice simulation.

COMMUNITY SERVICES AGENCY

Current Computing Environment

- There are 12 terminals in the Agency that use the County's mainframe PROFS system for electronic mail and file transfer.

- The Public Administrator/Public Guardian sends a tape twice a week to the Data Center for warrant writing.

- The Public Administrator/Public Guardian has a Prime computer with 23 online terminals.

- The Job Training Partnership program has a Prime computer with 12 terminals online which is funded by the State.

- The Veterans Service Office has a Local Area Network (LAN) system with 15 online terminals.

Mainframe Computing Plans

- The Agency plans an expanded use of the PROFS system as additional personal computers are purchased for the Agency.

- The Agency plans participation in the Countywide Accounting and Personnel Systems (CAPS) as applications are placed online.

Departmental Computing Plans

- The Public Administrator/Public Guardian Prime computer is scheduled for an upgrade and expansion of 40 terminals online to support the program and office automation.

- The Veterans Service Office LAN system is planned for upgrading and expansion throughout the Community Advocacy Division.

- The Area Agency on Aging plans the development of a contract monitoring program and will connect with the Community Advocacy Division 's LAN system.

- The Budget and Management Services Division plans to develop a budget monitoring program and will connect with the Community Advocacy Division's LAN system.

- A number of other stand-alone and LAN enhancements to existing systems are planned over the next few fiscal years.

- The Special Programs Division's Job Training Partnership Program state-owned computer system is planned for enhancements and expansion.

Advanced Technology Plans

- There are many opportunities in the Agency for telecommuting such as: staff performing work at home; the elimination of field staff trips to the office; and using dial access to leave electronic messages.

- Optical image processing will be studied for possible uses within the Community Services Agency.

- Office automation and electronic mail are in the early stages of implementation in the Agency and will be expanded in the future.

- The Agency plans to evaluate the use of satellite offices equipped with computers and modems.

COUNTY ADMINISTRATIVE OFFICE

Current Computing Environment:

•   Department DEC minicomputer cluster used for Hall of Administration (HOA) network, Office Automation, inter-departments/agencies E-mail system and for various department systems such as Case Management System, O. C. Liability System, Budget Component Book, Housing Inventory, Annexation Information, Population Estimating, Progress Report, Development Monitoring, Land Use Survey and Geographic Information System.

•   Department PC/MAC Local Area Networks which utilize the DEC VAX system as a server.

•   Several application systems running on both the Unisys and IBM mainframe in the County Data Center processing employment data,, extracting key data items from assessor files, maintaining Dual Independent Map Encoding (DIME) files, processing 1990 census data, processing annual budget data and maintaining County liability case files.

Mainframe Computing Plans:

•   Migrate application systems running on the Unisys mainframe to the IBM mainframe or to the HOA network.

•   Install Census processing capabilities in the IBM VM computing environment.

•   Modify the Land Related Urban Planning System to implement a new IDEAL 4GL front end.

•   Migrate the Budget Preparation System from the Unisys mainframe to the IBM MVS computing environment and interface it with the Advanced Budget Preparation Module of the new County Governmental Financial/Human Resource System (GFS/GHRS).

Department Computing Plans:

•   Coordinate and assist departments/agencies' hardware/software requirements to assure compatibility with the upcoming Budget System.

•   Expand and upgrade the Countywide urban planning database and improve the access, analysis and reporting tools associated with it.

•   Coordinate and assist other department/agencies on the Countywide Information Systems Management/Planning process.

•   Upgrade and expand the HOA DEC VAX 8850/6410 cluster as necessary to satisfy increased user demands within the Local Area Network.

•   Implement advanced Office Automation capabilities within CAO.

•   Implement the Agenda Item Transmittal (AIT) System in conjunction with the hardware upgrade.

•   Implement the HOA network telecommuting plan.

•   Conduct implementation planning for the Advanced Budget Preparation (ABP) System.

•   Expand and upgrade the ARC/INFO Geographic Information System, applications and databases, including a County-wide street network.

Advanced Technology Plans:

- Extend the use of Electronic Mail between diverse agencies and platforms.

- Add the use of optical storage technology to current system for storage and retrieval of Clerk of the Board and Risk Management records.

- Participate in the use of automated telephone systems and telecommuting as applicable.

- Coordinate and promote the use of the Geographic Information System and the sharing of geographic data within the County, including inter-agency and private sector agreements for cooperative development and maintenance.

COUNTY CLERK

Current Computing Environment

- The Criminal Justice (CJ) system on a Unisys 2200 computer provides processing for the Probate database and indexes and all Civil/Family Law cases which were not converted to the CLERK databases, and the Fictitious Business Names Index.

- A major IBM mainframe system is the CLERK I system supporting Criminal and Juvenile processing which was implemented in November 1988. The CLERK II system which supports Family Law and Civil processing, was implemented in March 1991.

- Imaging pilot project in document conversion stage.

- A number of functions are handled by PC systems, some employing packages, like Lotus 1-2-3, dBase III, WordPerfect 5.1, and some using custom software. These systems include financial analysis, exhibit control, legislation tracking, printing minute orders, indexing & preparing appellate documents, and tracking coordinated cases.

Mainframe Computing Plans

- Tailor Phase III of the CLERK for Probate cases which will migrate from the Unisys system to the IBM environment. Planned for FY 1990/1991.

- Develop interface between Filenet system and CLERK III system to pass specific types of data required by Probate functions.

- Use CLERK III in conjunction with imaging project to replace the current Probate processing handled by the CJ system.

- Expand IBM mainframe network to facilitate growth of user base.

- Develop utilization of bar coding, particularly in area of file tracking throughout CLERK systems.

Departmental Computing Plans

- Develop marriage license system, including an interface to Recorder's processing. Include re-design of the Fictitious Business Name system and registration of specified professions.

- Develop cashiering/finance system through acquisition of software or by in-house programming.

- Install Novell Netware on LAN file server.

- Update and enhance the PC hardware and software.

- Explore possibility of moving Appellate system from PC to mainframe to take advantage of existing database information.

Advanced Technology Plans

- Jointly develop, with Superior Court, a document image storage and retrieval system. Implement for Probate Courts.

Advanced Technology Plans (continued)

*   Provide public access to information on County Clerk systems including image retrieval.

*   Provide electronic submission of records to State agencies including Department of Justice.

Addendum

*   The County Clerk provides record keeping services to the Superior Court. The plans of the two entities of necessity overlap and complement each other. It is necessary to read both sets of plans together in order to fully appreciate their technological direction.

COUNTY COUNSEL

Current Computing Environment

- County Counsel has implemented Phase I of a three-year plan replacing a Unisys departmental minicomputer with a VAX 6410 clustered with the Hall of Administration VAX 8550 in the CAO computer room. Twenty personal computers and 16 terminals use WordPerfect word processing and All-In-1 office automation software and an Oracle relational database application for case management. The system is managed on a part-time basis by CAO systems personnel and is fully integrated with the HOA computer system for access to the AIT system.

Mainframe Computing Plans

- None.

Departmental Computing Plans

- Implement Phase II and Phase III of the three-year plan which will increase the number of users to more than 80. Phase II will add terminals and printers to fully automate the operations of the County Counsel main office. Phase III will add the County Counsel remote site at the Juvenile Justice Center as well as remote sites at John Wayne Airport and the Orange County Employees Retirement System offices.

- Additional applications are planned for development by County Counsel throughout the three-year system implementation. These applications include Opinion Retrieval and a Briefs and Legal Forms Bank.

Advanced Technology Plans

- County Counsel will investigate the use of high density storage and full-text retrieval for Opinion Retrieval and the Briefs and Legal Forms Bank.

- County Counsel will investigate the Automated Telephone Answering System technology for use in the department.

- County Counsel will consider using centralized access to Lexis computerized legal research services via County Data Center mainframe.

DISTRICT ATTORNEY
CRIMINAL AND FAMILY SUPPORT DIVISIONS

Current Computing Environment

Criminal Division

- The IBM 9370 is operational and the office has been connected electronically via the OfficeVision (PROFS) office automation product which provides E-mail, automated calendars, and connectivity to other County departments.

- All remote courts have been connected to the 9370 with work stations, non-programmable terminals, and laser printers.

- A replacement for the Burroughs PROMIS system has been developed utilizing a 4 GL (CSP) and an RDBMS (SQL/DS) and is designated the Case Tracking System (CTS).

- Extensive use has been made of personal computers to provide the office with word processing capability and other productivity aids.

- A Hewlett Packard plotter along with graphics software are being used to develop demonstrative evidence for trials.

- A personal-computer based Brief Bank application has been implemented.

- A local area network has been installed to support the processing of monies received from the asset forfeiture program.

- The office continues to contract with MMDS for part-time systems programming support.

Family Support Division

- The Hewlett Packard 3000 computer was upgraded from a series 48 with 16 bit architecture to a Series 935 with 32 bit architecture.

- Three new online systems were developed:

    - The Integrated Intercept System (IIS) which intercepts IRS AND FTB tax returns as well as UIB and SDI benefits.

    - The CS-850 Statistical Reporting system required by the State of California.

    - The Credit Reporting System where defendants' payment histories are reported to the three major credit reporting agencies (TRW, Trans Union, and Equiax).

Mainframe Computing Plans

Criminal Division

- Continue to utilize the County VTAM network for connectivity to remote courts.

- Participate in the Countywide law enforcement data sharing project currently under development.

Criminal Division (continued)

- Expand the link of the departmental IBM computer into the County Data Center for access to PROFS and certain County applications such as Muni Court,, Superior Court, Sheriff AJS, Recorder Vital Index, General Index, and the new Human Resource/Financial System.

Family Support Division

- Establish a link from the departmental HP computer into the County Data Center for access to PROFS, Social Services, Agency Case Data, Sheriff AJS, Recorder, Assessor, Human Resources, and Financial Systems to expedite the Family Support Case Management System process.

- Participate in the Countywide law enforcement data sharing project currently under development.

Departmental Computing Plans

Criminal Division

- Expand the IBM 9370 will be expanded to an ES/9000 series machine to support increased workloads and additional applications development.

- Development ad hoc inquiry and reports using the QMF product to support the CTS system.

- Serve as the regional node for the Gang and Drug Reporting, Evaluation, and Tracking (GREAT) System developed by the Law Enforcement Communication Network. As such, a Prime mini-computer will be installed which will be accessed by other jurisdictions.

- Incorporate several department personal computer data base systems into the CTS system.

- Continue expansion of personal computer technology to all areas of the office.

Family Support Division

- Provide personal computer to mainframe integration to generate legal documents using word processing and other office automation techniques.

- Expand current system (hardware and software) to handle 40 new users, case management growth, and personal computer to mainframe integration.

- Develop an online database system for the storage and retrieval of California Parent Locator data.

- Comply with the requirements of the proposed Statewide Family Support System.

Advanced Technology Plans

<u>Criminal Division</u>

- Begin the development of cooperative processing applications using the EASEL product and intelligent work stations (PS/2 personal computers).

<u>Family Support Division</u>

- Implement an Automated Telephone Answering/Voice Mail System to streamline information provided to the public.

- Provide an automated link from our existing Hewlett Packard system to the Voice Mail system so that specific public inquiries can be answered without manual intervention.

ENVIRONMENTAL MANAGEMENT AGENCY

Current Computing Environment

- Extensive departmental computing using multiple DEC VAX processors for office automation, engineering, mapping and department applications.

- Large online application processing on the County Data Center IBM 3090/300 for Planning and Regulation (PARIS) and Cash Register/Trust Account System (CRTA).

- Extensive use of the County Data Center IBM 3090/300 by Transportation for corridor traffic demands. Goal is to migrate this processing to RISC workstations.

- Limited use of the County Data Center Unisys mainframes for applications such as budget preparation and purchase order tracking.

Mainframe Computing Plans

- Migrate from the Unisys mainframes to departmental processors for the budget system and to PCs for utility billing system. Latter system migration is complete.

- Make continual improvements to the PARIS and CRTA systems to increase their functionality and extend them to more users including developers and other government entities.

- Anticipate doing no new development in the IBM 3090 environment.

Departmental Computing Plans

- Build a computer room facility to house EMA departmental computer hardware in the new EMA building. Move all computer and data communications equipment to new building.

- Upgrade the Office Systems computers through Fiscal Year 1991-92.

- Replace the Intergraph DEC VAX with Unix file and trade-in remaining (3) VAX-based workstations. Complete move to stand-alone/distributed computing.

- Upgrade and expand data communications to remote facilities including Katella Yard, Fruit Street, South County, Corona and Irvine Park.

- Complete the first Phase of the map modernization project consisting of an inventory of existing mapping activities, identification of new requirements and preparation of strategic implementation plan.

- Install and customize an online budget system for use in FY 92/93.

- Replace Housing Authority's 10 year old accounting and administrative system.

Advanced Technology Plans

- Extend the use of 3-dimensional design tools to the Flood Program and Design Divisions.

- Develop a pilot project for utilization of optical archiving of data compatible with the Intergraph system.

Advanced Technology Plans (continued)

- Develop geographic information system (GIS) applications using Intergraph's modular GIS environment software.

- Extend office automation to place a terminal or workstation on every EMA employee's desk and furnish word processing, electronic calendaring, electronic messaging and access to MCI E-Mail to send/receive message and documents to/from other government entities.

- Participate in County plans for electronic interconnectivity of agencies for electronic mail and electronic interchange.

FIRE DEPARTMENT

Current Computing Environment

- DEC VAX 83XX & 64XX minicomputers in a cluster configuration. The DEC Systems support the Computer Aided Dispatch System and Departmental Applications such as the Orange County Fire Incident Reporting System (OCFIRS) designed in Ingres.

- Local Area Networks supporting several applications for Fire Prevention, Investigation, HMDO, Training, Payroll, PCF Staffing, Engineering, Service Center, Hazardous Reduction, Finance and Executive Management, utilizing both MS-DOS and Macintosh personal computers.

- Several stand-alone PC database, word processing, and desktop publishing applications supporting several sections throughout the department.

Mainframe Computing Plans

- Upgrade the current DEC/VAX computer environment to include CPU and Peripheral Hardware, VMS Operating System and utility software, and multiple clusters.

- Complete migration from the National Fire Incident Reporting System (NFIRS) to an in-house developed 4GL application system (OCFIRS) that meets the specifications of the California Fire Incident Reporting System (CFIRS).

- Develop and begin implementation of an Integrated Fire Prevention System on the VAX Platform that incorporates areas of Inspections, Engineering, Plan Check, HMDO, Investigations, Fees, and Billing & Accounts Receivable.

- Develop and begin implementation of a plan to provide a VAX platform method for an OCFD Finance and Administration System.

Departmental Computing Plans

- Evaluate and implement a pilot system for Vehicle Maintenance and Automotive Records.

- Develop and begin implementation of a plan to connect and/or integrate PC and Apple Networks.

- Evaluate, pilot, and implement client server (DAL, Pathworks MAC-PC) based applications.

- Evaluate and implement a pilot Campus Network.

- Evaluate and implement recommendations on all department terminals, PCs, LANs, and other computer peripherals for compatibility, capacity, replacement/upgrades, redundancy, backup, maintenance, etc.

Advanced Technology Plans

- Evaluate and implement office automation throughout the department.

- Evaluate and implement bar-code technology for the Service Center Inventory System.

- Evaluate and implement the use of CASE technology for programming.

- Evaluate and pilot the use of GQL technology for user interface with departmental data bases.

- Implement the use of square tape back-up and retrieval technology across clusters.

GENERAL SERVICES AGENCY

Current Computing Environment

- GSA has large online computer systems running in the County Data Center as well as stand-alone computer systems including office automation and word processing, local area networks, computer-aided design applications, and other software applications specific to the operations of the Agency.

- Batch systems include capital projects, architect/engineering project cost estimates, and the Library BIBLIOS acquisition/inventory system.

- The GSA Headquarters office automation and word processing system runs on a Wang VS 100 located in the headquarters building.

- The Facilities and Real Property (F&RP) Function uses the Unisys mainframe in the Data Center for MAPPER access to F&RP application modules.

- The Purchasing Common Inventory System (COINS) and Purchasing Information System (PINS) are running in the County Data Center on the Unisys mainframe.

- The Purchasing Division has a small IBM AS/400 with 14 terminals. Additionally, a Wang OIS 140 minicomputer supports the Purchasing and Materiel Management divisions' word processing network.

- The Transportation online Mobile Equipment Services Information Systems (MESIS), which manages the County's fleet of vehicles and related equipment, is running in the County Data Center on the IBM 3090 mainframe.

- Registration and Elections has a large Data General departmental computer with application software for voter registration and vote counting. Significant upgrades have been installed to provide sufficient system support based on projected voter growth patterns through the 1992 primary and general elections.

- The Orange County Public Library has its own Tandem mainframe in the Data Center for automated circulation control (ACCS) with over 170 terminals serving all branch libraries.

- Throughout the General Services Agency there are numerous personal computers that are used for word processing, spreadsheet and other pc applications and for connection to the mainframe computers in the Data Center.

- IBM, PROFS AND CAPS access have been provided to some personnel within the Agency.

- Communications Division has a local area network with 35 terminals. The system supports maintenance service records, customer billing, inventory control, word processing, timekeeping and mainframe access (OfficeVision).

Future Computing Plans

- Develop a local area network for the GSA Headquarters building, funded in the 1991/92 budget, to serve GSA/Administration and the Architect-Engineer and Real Estate divisions. This network will replace the existing Wang office automation and word processing system.

- Replace the Utility Billing System (UBS), a MAPPER application, with a development module of the new County Accounting and Personnel System (CAPS) for GSA/Accounting.

Future Computing Plans (continued)

- Funding is provided in the 1991/92 budget for replacement of the Facilities and Real Property Management Information System currently written in MAPPER and running on the Unisys mainframe in the Data Center.

- During the next two years the Purchasing Common Inventory System (COINS) and Purchasing Information System (PINS) will be replaced by the Extended Purchasing System (EPS) module of the County Accounting and Personnel System (CAPS).

- The 1991/92 budget includes funding for a major upgrade to the Purchasing and Materiel Management divisions' IBM AS/400 which will provide for replacement of the Wang OIS 140 minicomputer.

- The Transportation Division is implementing an Automated Time Reporting (ATR) subsystem as an enhancement to the Mobile Equipment Services Information System (MESIS). Additionally, over the next several years, personal computers and controllers will be replaced due to damage caused by poor site environments at the landfills and garages.

- Funding for an Intergraph workstation for Registration and Elections is included in the 1991/92 budget. This workstation will interface with a DEC mainframe located in the EMA Data Center and will provide geographic computer-assisted drafting capability for creating and maintaining election precinct maps and information.

- The Orange County Public Library will be installing and implementing an integrated acquisition/inventory/circulation control system as a replacement for the current BIBLIOS acquisition and Automated Circulation Control systems. Funding for financing the system is provided in the 1991/92 budget.

- Expansion of IBM PROFS and CAPS access is planned for all functions and divisions in the Agency.

- Voice mail, automated messaging, image processing and other technologies will continue to be evaluated for cost/benefit within functions and divisions of the Agency.

HEALTH CARE AGENCY

Current Computing Environment

- There are a number of departmental systems on micro and super-micro computers, located at the user site: EMS, LAB, Environmental Health, Refugee, and IMS. IMS is single user; the rest are multi-user.

- An online Animal Shelter Tracking system is running on the Unisys mainframe in the Data Center using MAPPER.

- Batch systems running on the mainframe are: Dog License Renewal System, Birth and Death Statistics, and interfaces to other County systems.

- Health Care Agency has a large online departmental system for maintaining records on mental health, drug abuse and alcohol program patients. There are 175 terminals and PCs online using a DEC computer.

- In addition, there is a DEC Vax 4000 computer used for the Financial Management Data System. The system consists of a ten-user online VMS system.

- The Agency also has Wang VS 100 and Wang OIS 140 departmental computers with 110 terminals online supporting office automation functions, and agency-wide administrative data processing applications.

- There are numerous personal computers in the agency used as personal productivity tools for office automation, spreadsheet functions, and database functions.

- There is an IBM system 34 used in the agency for Public Health statistical reporting.

Mainframe Computing Plans

- A feasibility study is being completed which will recommend an automated patient tracking system which will eliminate the batch statistical reporting system currently processed in the Data Center.

- Some expansion to interfacing with other County systems such as PROFS access will be implemented over the next few fiscal years.

- Hardware and communication lines are currently being installed for HCA access to the new Countywide Human Resources and Financial System.

Departmental Computing Plans

- Correctional Medical Services (CMS) - a pilot project is currently under development for implementation in the Women's Jail. Due for completion second quarter, FY 1991/92.

- The short-range plans are to perform feasibility studies for development of a Birth System; the Death System; and an EMS Paramedic Module.

- Also planned is an Agency data study to identify short and long term system needs for Public Health.

- Plans are to examine feasibility of replacing obsolete systems such as the Lab and Environmental Health Hazardous Materials System.

Departmental Computing Plans (continued)

- Another goal is to expand the Agency's Office Automation System Network for both the administrative and program levels.

- Additional systems will be developed in-house on the Wang departmental computers as identified in feasibility studies.

- Long-range capacity analysis will be performed on departmental mini-computers (DEC 8530 and Wang S-100) to determine upgrade replacement requirements.

Advanced Technology Plans

- Health Care Agency will participate in the planned development of electronic transmittal of forms, mail and other documents County-wide.

- The opportunities for optical disk storage and retrieval will be studied. This technology has potential for developing a paperless records environment.

- Telecommuting which at present is being used on a limited basis will be studied for possible expansion to allow selected individuals to work at home and avoid trips to the office.

INTEGRATED WASTE MANAGEMENT

Current Computing Environment

- Integrated Waste Management has as IBM AS/400 departmental computer with an IBM system 36 at each of 4 remote sites online for processing transactions and billing at each remote landfill site.

Mainframe Computing Plans

None

Departmental Computing Plans

- The Integrated Waste Management Department is planning to install personal computer-based stand-alone systems, including CAD applications. This area has become a separate department requiring expansion of stand-alone information systems capabilities.

- The department has added 3 Sun Computers (SPARC station 2's) for stand-alone CAD applications. Additionally a Novell 386 network will be added for users on the 9th floor with PCs to utilize CAPS payroll, County purchasing systems and link with County PROFS through Integrated Waste Management's own E-mail system that resides on the departmental AS/400.

Advanced Technology Plans

- There is some potential for the Integrated Waste Management Department to market automated model programs for recycling and hazardous waste material.

JOHN WAYNE AIRPORT

Current Computing Environment

- System includes Wang VS65 minicomputer with terminals and personal computers connected in a network.

- The department minicomputer provides centralized word processing and E-mail capability.

- There are administrative systems also running on personal computers. The accounting department at JWA is running a Novell Local Area Network (LAN) with personal computers.

- The Airport also has two Intergraph CAD workstations performing mapping functions as part of an interactive system used by contract engineers.

Mainframe Computing Plans

- None.

Departmental Computing Plans

- The JWA will significantly upgrade the WANG minicomputer with more central memory and storage.

- Sixteen identified new applications will be developed by the airport. The bulk of these systems will be PC based.

- The JWA/CAD Facilities Management System is a major system estimated to cost over $500,000 and will be developed on an Intergraph platform by 1993.

- The Passive Aircraft Detection and Identification system is another major system effort costing an estimated $250,000. This will be a turnkey system, with proprietary hardware and software. Planned implementation is 1992.

- The replacement of the existing Nova System is another $250,000 turnkey system that has been requested. This system will track noise levels from incoming and outgoing aircraft. Planned implementation is 1991.

Advanced Technology Plans

- Expand the use of office automation including centralized word processing and electronic mail.

- Use of image processing to file, store and retrieve legal and other documents.

- Implementation of an automated telephone answering system to respond to public inquiries.

- Use of telecommuting for administrative and executive staff to support reduction of peak hour traffic.

- Marketing of JWA automated applications to other airports to provide royalty income for JWA.

MARSHAL

Current Computing Environment

- The Marshal's current Civil Process System runs on Unisys hardware.

- The Marshal is running several in-house developed applications on stand-alone personal computers. These applications include field log, case tracking, and emergency supplies inventory. Other office applications are being developed.

- Marshal's systems personnel as well as several managers are frequently telecommunicating using employee-owned PC's and modems.

- The Marshal's Field Services Division accesses the Sheriff's AWSS (Automated Warrants Service System) and AJS (Automated Jail System) applications, utilizing Unisys hardware.

Departmental Computing Plans

- The Marshal is completing work on a Request for Proposal for a new Civil Process System which has non-County general funding approval in 1991/92.

- The first phase of the Marshal's Board-approved master automation plan was completed in 1990/91 with a final acquisition of personal computers. Marshal staff and supervisors all now have PC access either stand-alone or with access to IBM/Unisys mainframe program.

- Personal computers currently in place will serve as access terminals for the Countywide CAPS and GHRS systems. Other hardware and/or software may be required to complete this access. Marshal is working with CAPS and GHRS project managers.

- After completion of the new Civil Process application, the Marshal plans to continue automating various other functions within the Department as identified in the Master Automation plan. These functions include:

    - Provide Field Services Division with expanded access to various Criminal Justice databases.

    - Automate decentralized field functions for serving warrants.

    - Install a computer-aided dispatch system.

    - Develop a system for managing the detention/inmate holding and bailiffing/securing functions.

    - Automate budget, fixed asset, purchasing, petty cash, accounts receivable and other general administrative and accounting tasks.

Advanced Technology Usage

- Investigate the use of automated phone answering and message systems to save employee time answering inquiries, routing calls and taking messages. The Department is awaiting the availability of these systems Countywide through GSA.

- Investigate the use of video touch screens to simplify use of public access terminals.

- Develop the ability to produce video tapes for training Marshal staff.

- Investigate the use of optical disk technology for storing and retrieving warrant documents.

CENTRAL MUNICIPAL COURT

Current Computing Environment

- Municipal Courts Automated Procedures System (MCAPS) runs on the Unisys 2200/402 mainframe.

- Several systems operate on a PC-based local area network: a backup cashiering system, a calendaring and case tracking system (TrACS), a controlled assets system, and a system for off-site inventory of closed cases.

- Several systems are based on an AS/400 departmental mini-computer system: a cashiering system, Civil calendaring and notice system, and a data entry system for tape interface with MCAPS.

- Optical disk for electronic image retrieval of filed documents.

Mainframe Computing Plans

- IBM 3090 mainframe system is being designed by Peat Marwick to replace MCAPS. This system will automate citation, complaint, small claims, and civil processing, as well as courtroom docketing.

Departmental Computing Plans

- Continuing development of systems to be based on the AS/400 departmental mini-computer system. These systems include incorporating current PC functions -- tracking of cases (TrACS) and office automation. Office automation will include personnel files, payroll, budget preparation, training assignments, reports, judges' assignments, supplies, forms control and management, and inventory of fixed and controlled assets.

Advanced Technology Plans

- Convert to audio-video taping of court proceedings.

- Install automated telephone answering system.

- Provide satellite ATM payment stations.

- Develop an optical disk-based court reporting system.

HARBOR MUNICIPAL COURT

Current Computing Environment

- Municipal Courts Automated Procedures System (MCAPS) runs on the Unisys 2200/402 mainframe.

- The MC50 Jury System and MC51 Civil/Small Claims system run on the IBM mainframe.

- A variety of systems operate on microcomputers, some on a local area network. These include Bail Deposit/Transfer system, word processing, Judicial Council Statistics, Budget Analysis, Cashiering, Case Flowcharting and calendaring.

- Link to IBM mainframe for access to PROFS.

- Automated Telephone Answering and Messaging System.

Mainframe Computing Plans

- IBM 3090 mainframe system is being designed by Peat Marwick to replace MCAPS. This system will automate citation, complaint, small claims, and civil processing, as well as courtroom docketing.

- Integrate with new Financial/Human Resources system for budget preparation and processing.

Departmental Computing Plans

- Install an integrated office automation system on the AS/400.

Advanced Technology Usage

- Employ optical disk for image storage and retrieval.

- Use intelligent character recognition and image processing for correspondence and case documents.

- Provide interface between the automated telephone system and the new court system so that information can be obtained by telephone.

- Provide capabilities to work at home/telecommute.

NORTH MUNICIPAL COURT

Current Computing Environment

- The Municipal Courts Automated Procedure System (MCAPS) runs on the Unisys 2200/402 mainframe.

- North Court also makes use of PCs for word processing, spreadsheets, and office supply tracking.

Mainframe Computing Plans

- North Court will deploy two systems: the Municipal Court System (MCS) and the Countywide Accounting and Personnel System (CAPS), running on the IBM 3090 mainframe.

- MCS is being developed by Peat Marwick to replace MCAPS. This system will automate citation, complaint, small claims and civil processing, as well as courtroom docketing. The implementation date for the Full Traffic Module of MCS is February 1992. Equipment to be used:

49	IBM 3472 Terminals
3	IBM PS/2 Mod 30 286 w/3270 adapter
18	IBM PS/2 Mod 25
3	IBM Sys Printer (4234)
4	IBM Laser Printer (4029)
11	IBM Proprinter II (4201)
7	IBM Proprinter IIxl (4202)
27	Programmable Cash Register Drawers

- CAPS will replace the current manual environment of payroll and personnel processing as well as aid fiscal managers in their budget planning, tracking and implementation. The implementation date for Phase I is March 1992 and Phase II is July 1992. Equipment to be used:

1	IBM compatible (Keen-2530) 386
3	IBM PS/2 Mod 30 286 w/3270 adapter
1	IBM Laser Printer (4019)
1	Epson LQ-1050 Printer
1	Macintosh IIsi
1	Imagewriter II Printer

Departmental Computing Plans

- Upon implementation of the new Municipal Court System's Traffic and Criminal modules, the XL-40 system (MCAPS) will be eliminated.

- Administrative and accounting staff, as mentioned earlier, will use CAPS, replacing the current manual procedures.

- Advanced word processing, space and project planning will be done using an Apple Macintosh IIsi.

Advanced Technology Plans

- Use of advanced technologies will be evaluated after the new court system has taken form.

SOUTH MUNICIPAL COURT

Current Computing Environment

- Municipal Courts Automated Procedures System (MCAPS) runs on the Unisys 2200/402 mainframe.

- A Financial/Cashiering System runs on the departmental IBM AS/400 and its token ring.

- All data entry to both Unisys 2200 and IBM 3090 is processed on the departmental IBM AS/400.

- Office Automation (Office Vision) runs on the departmental IBM AS/400 and its token ring.

- Automated Bail Refund warrants (AC71A) run on the departmental IBM AS/400.

- DMV access processes throughout South court and the Annex via the departmental IBM AS/400 and its token ring.

Mainframe Computing Plans

- IBM 3090 mainframe system is being designed by Peat Marwick to replace MCAPS. The first phase of this system will automate the Traffic Division and will be implemented during the first half of next year.

Departmental Computing Plans

- The IBM AS/400 communication lines will be enhanced for the new Municipal Court system.

- The departmental IBM AS/400 will be upgraded to support ImagePlus/400. This will permit storage and retrieval of documents on optical libraries. ImagePlus provides folder management and workflow management.

- South Court has purchased a portable computer with a modem for telecommuting purposes.

- Use CD-Roms on personal computers.

Advanced Technology Usage

- Employ telesis conferencing.

- Provide information to public via touch computer screens.

- Permit payment of citations, payment accounts, etc. by ATMs.

- Use electronic recording equipment to document courtroom proceedings and to facilitate translation.

- Replacement of Judicial Libraries with computers and CD-ROM.

WEST MUNICIPAL COURT

Current Computing Environment

- Municipal Courts Automated Procedures System (MCAPS) runs on the Unisys 2200/402 mainframe.

- A variety of applications run on PCs, including systems for calendaring, bail deposit and transfer, fees and fines, bail calculation, and case management.

- Cashiering system obtained from Central Court runs on PC LAN.

Mainframe Computing Plans

- IBM 3090 mainframe system is being developed by Peat Marwick to replace MCAPS. This system will automate citation, complaint, small claims, and civil processing, as well as courtroom docketing.

Departmental Computing Plans

- Install an office automation system integrated with the new mainframe Municipal Courts system. Provide telecommunications capability on this system to support telecommuting.

Advanced Technology Plans

- Provide capabilities for working at home/telecommuting for judges and administrative staff.

- Use imaging technology for storage and retrieval of Court documents.

PERSONNEL

Current Computing Environment

- Seven Unisys mainframe-based Personnel and Benefits Administration Systems (PRMS) are running in the County Data Center. Systems are batch-oriented systems that average over 15 years of age. These systems will be phased out in the period December 1991 - March, 1992.

- Departmental minicomputer application system for applicant processing, certification, and tracking. Systems are running on the Personnel Department's Prime 2350 computer located in the Hall of Administration.

- Numerous personal computers (PCs) used for word processing, spreadsheet, and other office automation applications. Many of the departmental PCs are being used for administrative application systems such as the County's COBRA plan; employee leave tracking; tuition reimbursement; job class history; and contract modeling.

Mainframe Computing Plans

- Implementation of American Management Systems' (AMS) Human Resources System (GHRS) will take place in December 1991. The AMS GHRS system is currently running on the County's IBM 3090 computer in a test implementation.

Departmental Computing Plans

- Purchase and implementation of records storage and retrieval system for Central Personnel records. An image processing system to allow widespread, quick, random access to personnel historical files; employee benefit enrollment and eligibility records; applications for employment; certification lists; job description/notices; and recruitment/classifications history files.

- Add additional wide area network workstations for out-stationed personnel teams to have access to various Central Personnel administrative information.

- Implement Personnel office automation system, including a standardized word processing, electronic mail, calendaring system for various secretarial and administrative employees.

- Utilize County's end-user computing mainframe IBM (4381) for management decision support (InfoCenter). Use existing ad hoc data extraction and reporting tools such as SAS and AS to acquire and analyze personnel and benefits information.

- Develop personnel systems interface to the County's Library information system to make County job announcements available to Library patrons.

- Upgrade the existing applicant processing system to a DOS-based version running on IBM/compatible PCs, eliminating and replacing the Prime 2350 based system.

Advanced Technology Plans

- Expand use of FAX machines to improve timeliness of document exchange between personnel teams, central personnel, and departments/agencies.

- Use voice mail technology to improve communications between Personnel and agencies/departments and lessen load on administrative staff for items such as message taking.

- Use computer-based training (CBT) to provide individual, self-paced training programs for County employees.

PROBATION

Current Computing Environment

- Purchase of a midrange AS/400 (Model D70) including 450 online terminals and software customization is in process.

- An online Accounts Receivable/Disbursements System is running in the Data Center on the Unisys 2200/400. There are approximately 40 terminals online to this system. In addition, a batch Juvenile Bed Model using PL/1 is running on the Unisys mainframe.

- There are over 100 personal computers in the agency used for word processing, spreadsheet functions and stand-alone distributed personal computer applications. Some of this equipment is configured to enable access to databases maintained by other County agencies.

Mainframe Computing Plans

- By FY 1994/95, the current Accounts Receivable/Disbursement system running in the Data Center should be running on the Department's AS/400 computer platform.

- During FY 1991/92, the Department will address whether the current Juvenile Bed Demand Projection Model should remain as a Data Center application or be transitioned to the AS/400 environment.

Departmental Computing Plans

- Significant attention is being devoted to the development of the departmental system. Installation of the AS/400 is expected to occur during 1991, with customization and implementation of the selected software over the next 4 to 5 years.

- Existing personal computers will be linked to the departmental system. In some cases, stand-alone applications will continue to be used in conjunction with the integrated system.

- The Department will participate in a countywide effort to evaluate data-sharing opportunities between and/or among County criminal justice agencies and develop appropriate, cost-effective interface plans.

Advanced Technology Plans

- Various advanced technologies have been implemented recently with great success. Facsimile machines, cellular phones, personal pagers and an increase in the number of law enforcement band hand-held radios have greatly enhanced service delivery capabilities. In some cases (i.e. FAX) we have reduced associated travel. We will continue to evaluate, within certain budget constraints, the potential use of mobile digital terminals, telephone messaging, and expanded use of cellular phones and personal pagers.

- Evaluation of telecommuting projects in similar agencies will continue with strong emphasis on the potential for implementation by the Probation Department.

- Image processing will be of significant advantage to the department due to its heavy reliance on court related documents. While the start up costs are expensive, the benefits are significant for gains in effectiveness and productivity in the department.

- The expanded use of electronic surveillance technology for providing alternatives to confinement in County facilities is certain.

PUBLIC DEFENDER

Current Computing Environment

- The Public Defender utilizes a departmental Unisys 5000/95 minicomputer with a centrally located processor and a remote site network to link all Public Defender Municourt locations.   Several separate small PC based systems are utilized for special criminal (death case) case activities. The department runs local (PC) and central (minicomputer) word processing using personal computers and terminals, spreadsheet and database management software also run on the central minicomputer.

  The Computer Assisted Law Library (CALL) has been implemented to provide law and case information to Public Defender remote Municipal Court sites and to attorneys working at home.

Mainframe Computing Plans

- The Department has access to the MCAPS (Municipal Court) Database and is also implementing inquiry capability with the InsLaw (Superior Court) Database.

- If the Courts agree and if the mainframe systems remain reliable, this department would like to use these systems to produce court schedules, thereby eliminating duplicate data entry.

Departmental Computing Plans

- Interface the departmental minicomputer with the Data Center IBM mainframe environment for use of mandated County systems (i.e., Human Resource and Financial System). (Budget approved)

- Implement a department-wide office automation system. (Budget approved)

- Implement several (seven) additional PC stand alone and PC Local Area Network (LAN) based systems as soon as funding is available for development over the next five years. (Budget appoved)

Advanced Technology Plans

- Implement image processing, laptop computers, telecommuting, electronic forms, Countywide E-mail and other advanced technology ideas after County pilot projects reveal direction of the County, and funds become available.

RECORDER

Current Computing Environment

- A DEC VAX 6220 minicomputer is installed to support application projects.

- A Nixdorf minicomputer system is currently supporting portions Grantor/Grantee reporting for the Recorders Office and data entry activities.

- An extensive network using leaded ADN circuits attaches 25 County libraries to the Recorder Departmental DEC computer. Plans include attaching an additional 23 County agency/department sites.

Mainframe Computing Plans

- Data transfer to/from IBM via the installed SNA Gateway.

Departmental Computing Plans

- Vital Records

    - Expand vital records information available at County libraries to include the rest of the birth records and all death and marriage records.

    - Establish countywide network to provide access to vital records data to other County agencies/departments.

    - Offer to provide abstract services to city governments.

- Official Records

    - Expand General Index to include a minimum of five years of historical data along with the current year.

    - Develop a security system that will allow us to sell access to this system to private entities such as title companies, legal firms and insurance companies.

- Accounting

    - Develop a real time online accounting system for sequencing, calculating and collecting of fees for recordable documents. This will provide for remote site document recording.

- Optical Storage and Retrieval

    - Provide for the scanning, imaging and retrieval of recordable documents to replace a portion of the existing microfilm system.

- JAD

    - Develop a joint application with HCA to share resources on birth and death data.

    - Develop a joint application with the county Clerk to share resources on marriage data.

    - Develop joint applications with the Assessor for data sharing and document transmittal.

RETIREMENT OFFICE

Current Computing Environment

- The OCERS database system runs on equipment which is vendor supplied and operated. It maintains records of active and retired employees. It currently obtains data from the Auditor's and Personnel systems, and also provides for direct input of data.

Mainframe Computing Plans

- Departmental computing capability has been enhanced, and department reliance on mainframes is being eliminated. Data will be passed back to a mainframe only to provide for retiree disbursement.

Departmental Computing Plans

- Provide access to electronic mail (PROFS).

- Develop online access to database by members' employers.

- Provide data communications capability to new Financial/Human Resources system.

Advanced Technology Plans

- Develop use of optical disk technology for storing and retrieving member documents.

SHERIFF-CORONER

Current Computing Environment

- The Sheriff-Coroner's applications are predominantly based on the Unisys 2200/402 mainframe (OCS Processor).

- The Unisys 6000/60 system supports the CAD (computer aided dispatch) system.

- The Coroner Case Management and Personnel Unit applications reside on the Wang VS/65. The Wang also provides department word processing.

- There is also a wide variety of PC-based applications, including several PC-LAN based systems.

Mainframe Computing Plans

FY 1991/92:

- Completion of the additional AJS milestones of inmate worker module, community work module, correctional programs interface module, weekender module and visitor tracking module.

- STOPS-LEEDS module of event/case tracking and VCR reporting.

- Patrol/Investigator management statistical reporting and case load reporting.

- CLETS message switching Phase I of the project to migrate OCATS from DEC to the OS1100.

- ACS (check system) evaluation and enhancement.

- AWSS (warrant system) enhancements to improve processing efficiency and eliminate weekly microfiche.

- Property system enhancements to include utilization of bar coding.

- CJI (juvenile index): complete the re-write of existing programs to improve screen handling, and system efficiency.

FY 1992/93:

- CLETS message switching: complete Phase II of project which incorporates implementation on the OS1100 mainframe.

- MCAPS Interface (court system): complete interfaces and data exchange with the new court system developed.

- AJS (jail system): continue development of the additional modules of monthly billing, state and federal reporting, and pre-release module.

- A uniform system access security methodology for all applications will be incorporated into all existing and future systems.

- Improved data exchange techniques will be developed to improve timeliness and reduce manual effort required in support of State DOJ activities.

Departmental Computing Plans

*   CAD (dispatching) continued efforts to improve responsiveness and reliability of the Unisys 6000/60.

*   Utilization of PC-LAN technology for areas such as commissary operations, investigative units and office automation.

Advanced Technology Plans

*   Utilize image processing for local arrest records and departmental reports.

*   Mobile Data Terminals (MDT's) and PEN based PCs for patrol and investigation activities, to be coordinated with GSA/Communications MDT RAdio Systems Planning.

*   Inmate identification via digitized photos and bar code bracelets.

SOCIAL SERVICES AGENCY

Current Computing Environment

- Large batch and online systems running on County Data Center IBM 3090/300J for Welfare Case Data (WCDS), Social Services Reporting (SSRS) and Greater Avenues to Independence (GAIN). Environment supports more than 1000 shared terminals servicing over 2000 users.

- Relatively small department applications running on IBM or IBM compatible microcomputers for Targeted Assistance Tracking, Foster Care Registry, Adoption Database, Supervisory Case Review and Orangewood Children's Home Registry.

Mainframe Computing Plans

- Long-term (Fiscal Year 1994-95) replacement of the Welfare Case Data System and the Social Services Reporting System with more modern systems.

- Continual update of current systems to reflect changes in mandated services, and to modernize processing by extending the online nature of the systems and decentralizing their outputs.

- Addition of significant short-term Case Data and Social Services Reporting modules such as Social Services Reporting System Phase II.

Departmental Computing Plans

- Install an Advanced Office System (AOS) in the Agency to provide electronic mail, document storage and retrieval, optical character recognition, videotext, word processing, data base management and spreadsheet processing. The system would interface with the Welfare Case Data System through an Agency-wide Local Area Network (LAN)

Advanced Technology Plans

- Office automation plans include the use of several advanced technologies listed above.

- A pilot voice mail project currently running in the Agency has proven beneficial and is being extended.

- Several field units have been identified as logical candidates for telecommuting. Pilot projects in other agencies and other counties are being monitored for results. SSA is already highly decentralized and constantly searches for ways to bring their services close to the clients including regional offices and field workers who visit homes.

- Investigation of electronic benefits issuance via bank debit cards and ATM technology continues, and the agency is following pilot projects in other jurisdictions.

- Electronic forms and mail interchange with other county agencies is of interest to SSA. In addition, SSA is interested in electronic interchange of data with other county social service agencies as well as state agencies.

- Agency plans to evaluate imaging technology to reduce storage requirements and reduce the use of paper in agency operations.

- Agency is also evaluating automated finger printing technology for its general relief program.

SUPERIOR COURT

Current Computing Environment

- A Unisys 600/80 and a Unisys 5000/95 support Departmental Computing needs and provide connectivity to the County Data Center as well as external legal research facilities and telecommuting. Departmental applications include a comprehensive office automation capability and Oracle database programs used to enhance productivity. Judicial workstations are being installed in Judicial Officer chambers to provide case management information and support activities associated with implementation of AB3820.

- Statistical multiplexing supports connectivity to outlying facilities where Judicial Officers and administrative support staff require access to the Superior Court Departmental System.

- A Banyan PC based Local Area Network (LAN) is employed to collect and process statistical data for Judicial Council Reports.

- The Criminal Justice (CJ) System, running on a Unisys 2200, provides processing for Probate Cases. It is planned to migrate the processing of Probate Cases to the Clerk III system on the IBM 3090 host when implementation of this application is completed.

- Implementation of a Filenet optical disk image system for the storage and retrieval of Probate Case Files, including the automation of Probate Examination activities and integration with the Clerk III Probate Case Management and Tracking system is in process.

- The functions associated with Criminal, Civil and Family law cases are now being processed on the Clerk I and II system on the IBM mainframe. The Jury Draw System is being processed on the IBM mainframe. Implementation of the Clerk III system for processing probate cases on the IBM mainframe is underway.

Mainframe Computing Plans

- Further enhance the Clerk I, II and III system to accommodate reporting and case management tools required to support AB3820 and to generate Judicial Council Reports.

- Provide local access to CAPS GHRS and GFS functionality through the Departmental System.

Departmental Computing Plans

- Implement Unicom Jury Management System and expand support to all remote Court locations.

- Explore use of optical scanning to capture demographic data to develop voir dire information needed in the jury selection process and to reduce the cost of other labor intensive key entry operations.

- Expand the use of online jury instruction.

- Relocate image hardware platform to JJC to support Probate Department in their new location.

- Investigate replacement of law libraries by providing electronic access to external sources.

- Automate monitoring of claims processing (Accounts 0692 & 062).

- Provide an administrative/personnel system through enhancements to the departmental computer and access to the new Human/Financial Resources System.

- Develop a case management and tracking system for cases assigned to arbitration.

- Develop a system for scheduling and tracking interpreter services.

Advanced Technology Plans

- Initiate plans to phase in the use of document image storage and retrieval technology in other areas of the court.

- Employ use of PC workstations for image terminals in Probate Document Storage and Retrieval System.

- Expand utilization of systems and technology to the legal community to reduce the traffic in the courthouse areas as well as move toward a "less-paper court".

- Use telecommuting and remote access for selected court functions, administrative staff, Judicial Officers, judicial support, systems development, etc.

- Improve delivery of services to Court clients through the use of voice mail in areas such as: Jury Service, Probate, Mediation and Investigation, Legal Research, Court Reporter/Interpreter Services, Master Calendar, Arbitration, Criminal Court Coordination, etc.

- Explore use of voice-based artificial intelligence to provide end user support for departmental computer applications.

TREASURER-TAX COLLECTOR

Current Computing Environment

- 15 Unisys and IBM mainframe based property tax systems are running in the County Data Center. Systems include functions such as: secured, unsecured, and supplemental tax collection; bank reconciliation; prior years postponements; secured/supplemental online inquiry.

- Departmental minicomputer system for tax bill remittance processing. System consists of an NCR Tower 700 minicomputer and RPS-7770 workstations located in the Finance/Engineering building. The system scans, encodes, and microfilms checks and reports collections for all tax rolls. Creates and transmits collection transactions for Unisys mainframe to process under batch. Runs emulation software to access Unisys and IBM mainframes.

- Numerous personal computers (PCs) used for wordprocessing, spreadsheet, data transmission to/from outside agencies and other office automation applications. Many of the departmental PCs are being used for administrative application systems such as County deferred compensation tracking, fund accounting, investment accounting.

- 11 station LAN running NETWARE over Ethernet. Utilized for cashiering and Treasurer's back office system.

Mainframe Computing Plans

- Completion of enhancement of the current IBM 3090 based secured/supplemental online inquiry systems to include prior years' information and capability to dynamically print duplicate tax stubs.

- Implementation of remaining Assessment/Tax System (A/TS) Phases. Continuation of the County's multi-year effort to migrate to the IBM 3090 and enhance the current Unisys-based property tax systems. These A/TS Phases include various Treasurer-Tax Collector functions pertaining to the billing and collection of property taxes.

Departmental Computing Plans

- Completion of the new remittance processing system to replace the current nine year old Burroughs system. Current system has limited capacity, maintenance problems, and cannot support the projected growth in tax rolls. The new system will process payments faster resulting in reduced deposit float time and staff overtime in peak periods.

- Implementation of the personal computer-based deposit order system which allows departments and agencies to electronically send deposit orders to the Treasurer and Auditor-Controller. System will reduce costs in terms of fees for cashier checks, armored transports, and in terms of time for County staff required to wait in bank lines.

- Purchase and implement a records storage and retrieval system for Treasurer-Tax Collector records. An image processing system will allow widespread, quick, random access to tax bills, collection histories, penalty cancellations, liens, tax default newslists, and other documents.

- Expand use of office automation technology such as E-mail, local area networks, and FAX in order to improve timeliness of information exchange between various departmental divisions, Auditor-Controller and agencies/departments.

- Explore the feasibility of accepting tax payments via ATM transactions or touch-tone wire transfers.

Departmental Computing Plans (continued)

- Use automated telephone answering system to screen and direct calls to appropriate divisions. General information inquiries would be handled using touch-tone to answer a series of questions and give computer-voice responses.

- Solicit billable remittance processing work from outside agencies using the departments newly-purchased equipment/system.

- Expand saleable goods/services (computer generated) to outside agencies and private businesses.

Graphic Presentation of Growth in Data Processing in the County

The following attachment presents charts of the common
quantifiable factors of measurement in the data processing
environment.

Note: The following graphs that deal with processor
requirements and transaction counts reflect data from prime
shift: 8 a.m. to 5 p.m. with 12 to 1 p.m. as lunch hour.

This page intentionally left blank

Figure # 1: Network Devices
1988-1996

Number
of Devices

337% Growth
in 8 Years

IBM
Unisys
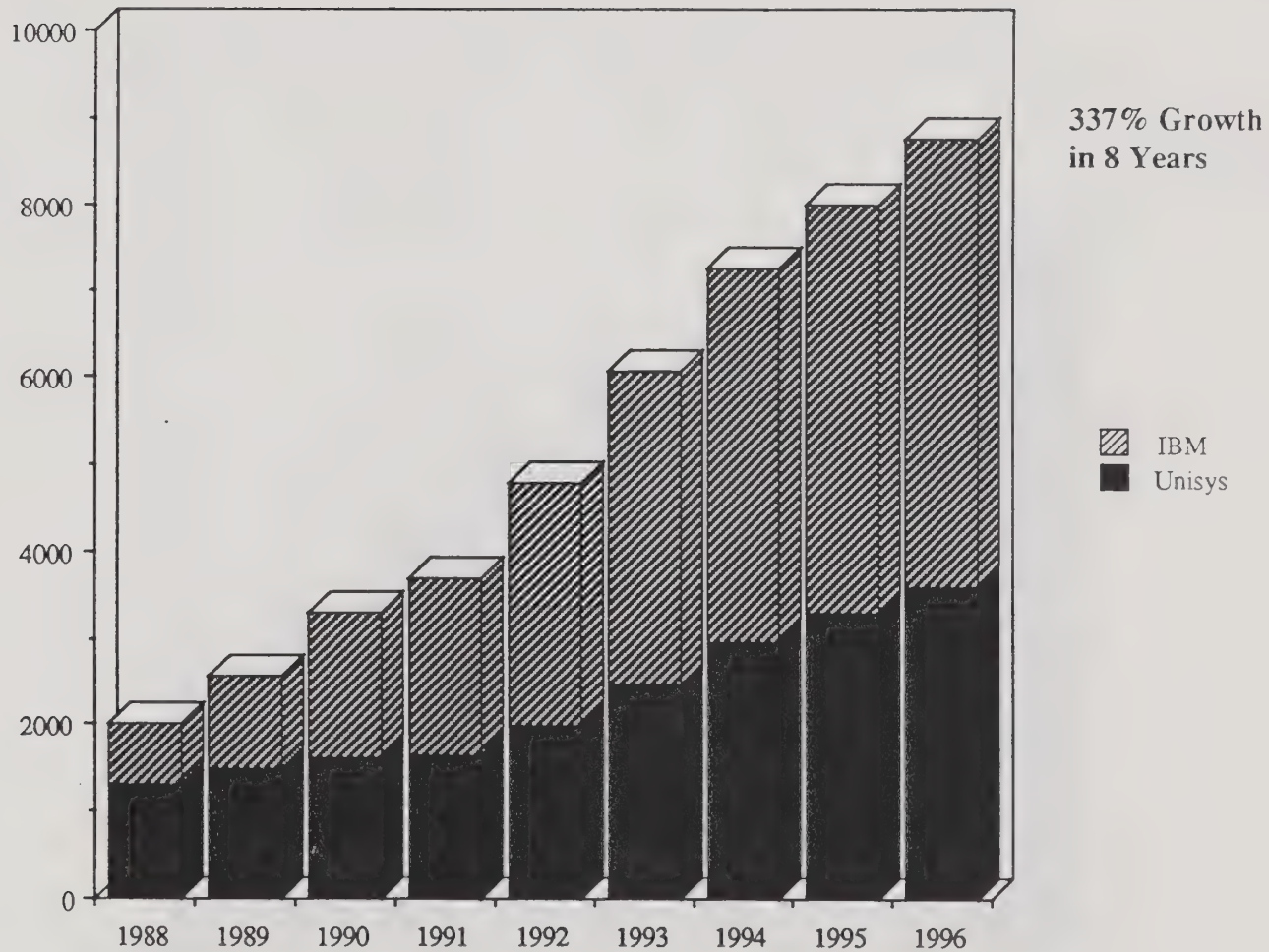
The number of terminals which have access to either the IBM or
Unisys systems is 4,398. This represents an increase of 120% over
1988. The projected number for 1996 is 8,750. A terminal can be any
device capable of communicating with the mainframe. Some examples
are IBM and Apple Macintosh personal computers and other directly
linked terminal devices.

Figure # 2: IBM Transactions
1988-1996

Online
Transactions
(in millions)

150% Growt
in 8 Years
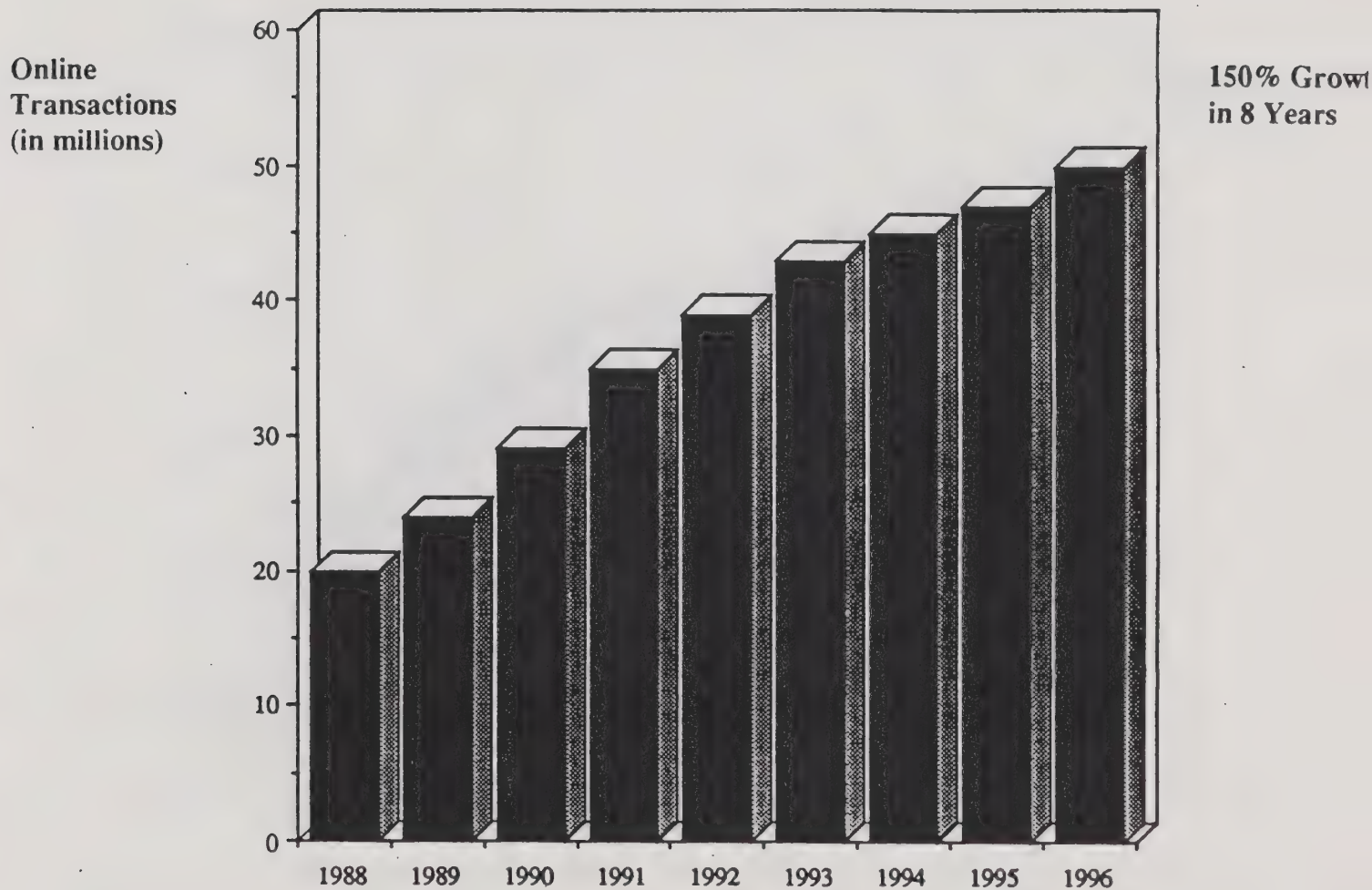
The number of transactions processed on the IBM mainframe in 1990 was 29 million. This represents an increase of 45% over 1988. The projected number for 1996 is 50 million transactions. Transactions are data requests and updates performed in data base systems.

Figure # 3: IBM Jobs Scheduled
1988-1996

Batch Jobs Scheduled

105% Growth in 8 Years
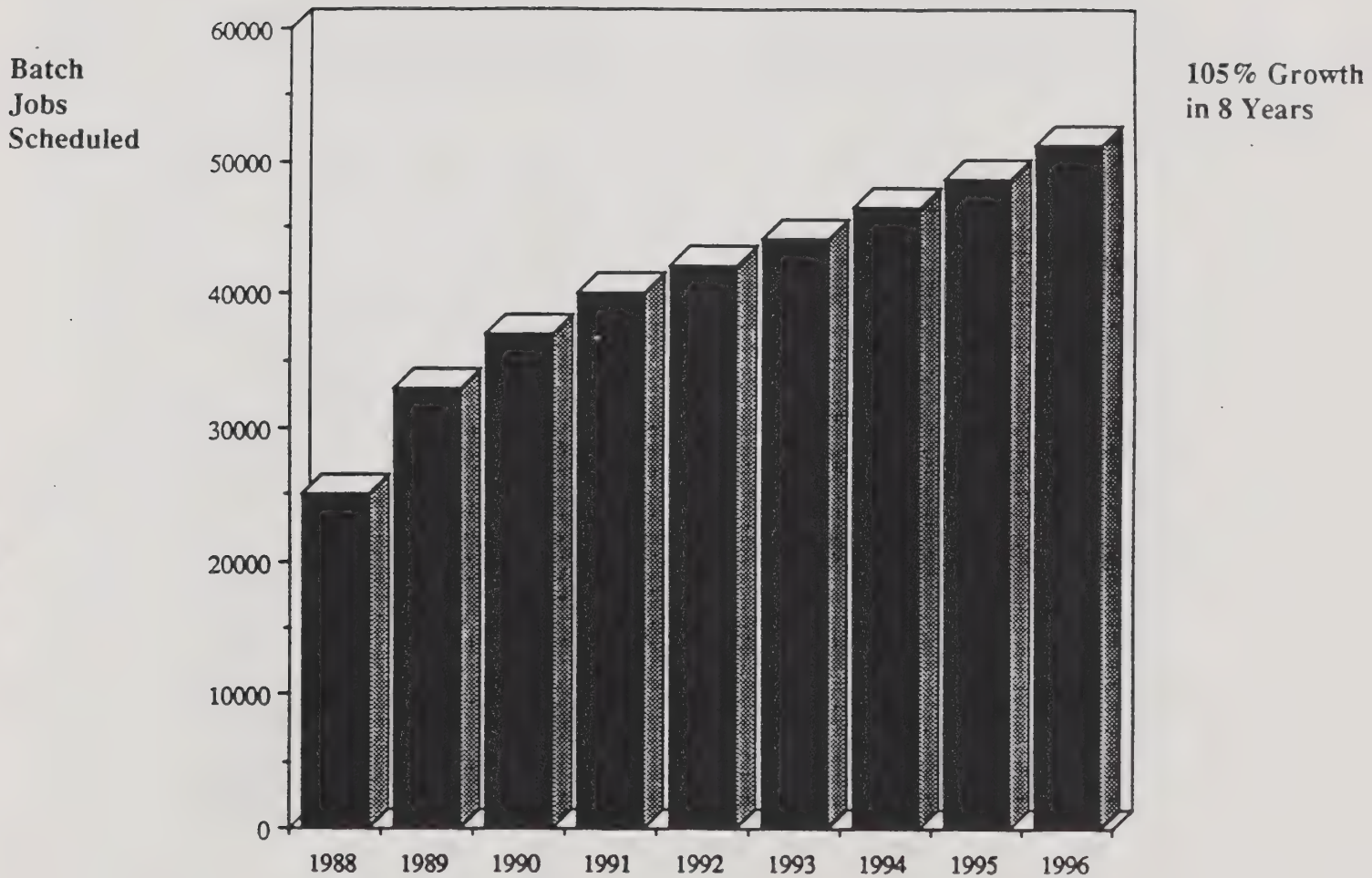
The number of application jobs processed on the IBM mainframe in 1990 was 36,962. This represents an increase of 48% over 1988. The projected number for 1996 is 51,000 jobs. Jobs are the means by which end users obtain reports and listings.

Figure # 4: Forecasted IBM Processor Requirements
1988-1996
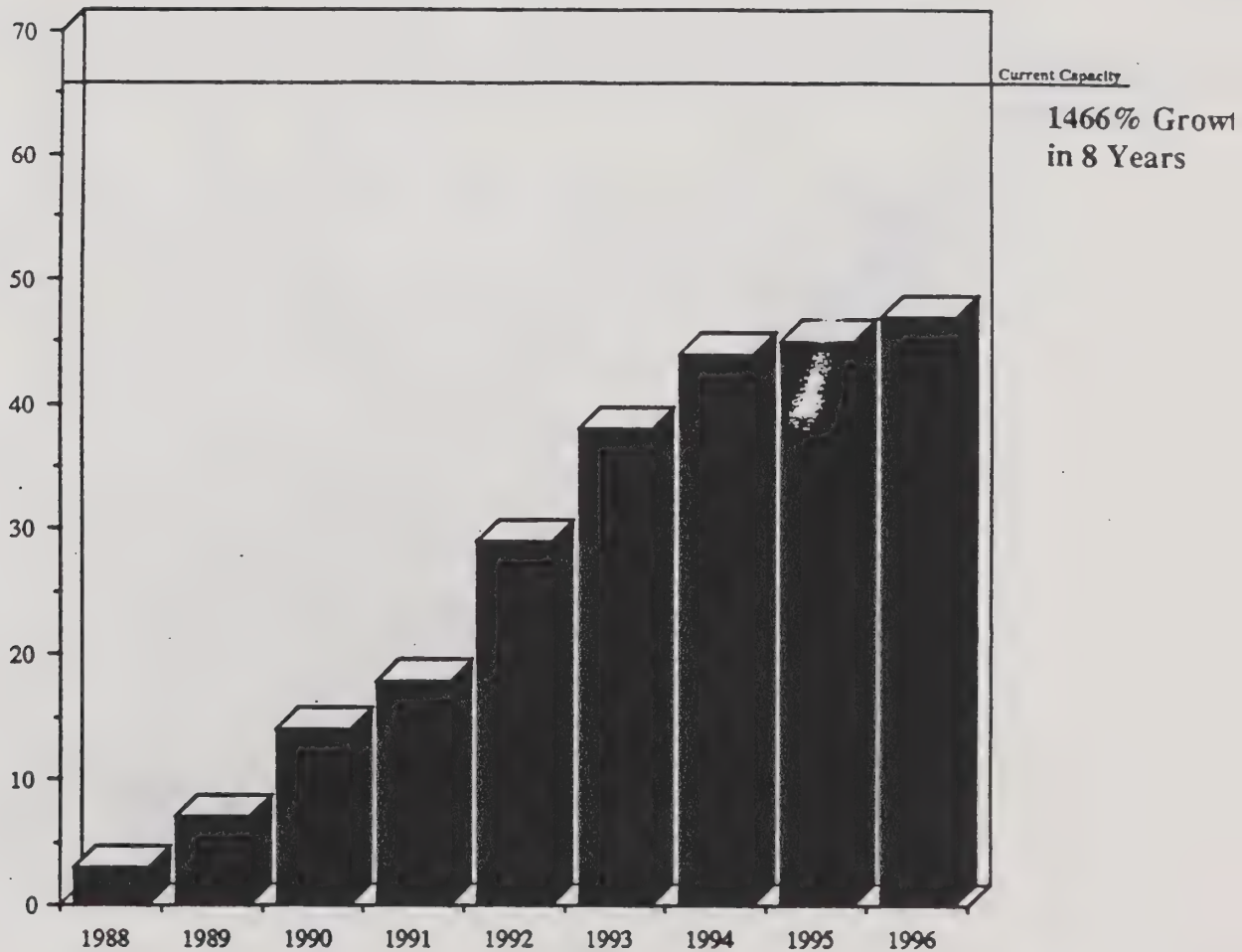
In January 1991, the IBM CPU was rated at 18 MIPS (millions of instructions per second). This was an increase of 500% over 1988. The projected number of MIPS for 1996 is 47. MIPS is a measurement of a CPU's processing power.

Figure # 5: IBM Disk Storage
## 1988-1996

Gigabytes
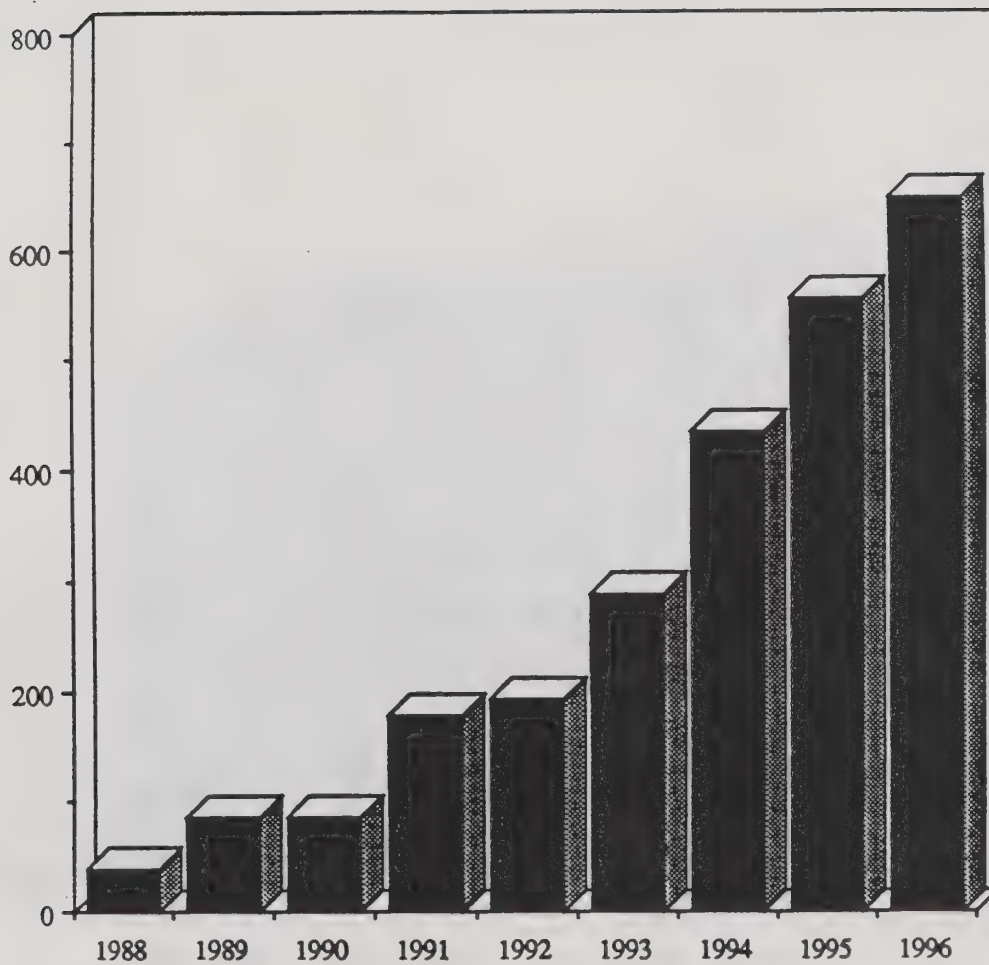
1525% Growth
in 8 Years

There was 177 gigabytes of direct access storage device (DASD)
capacity on the IBM in 1990. This represents an increase of 325% over
1988. The projected number of gigabytes needed for 1996 is 650.

Figure # 6: Print Pages
1988-1996

Print Pages
(in millions)

24% Growth
in 8 Years
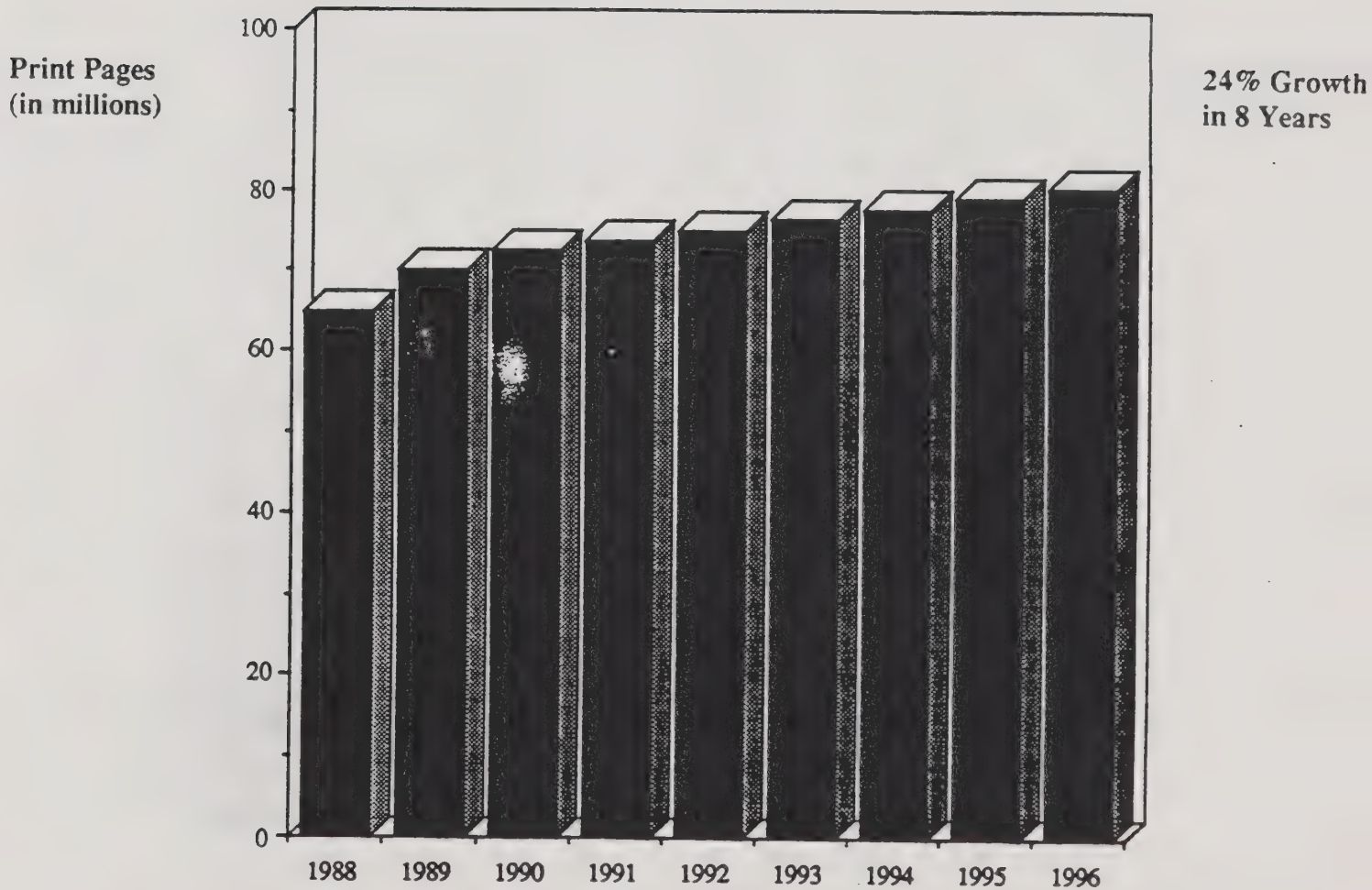
The number of pages printed on the IBM and Unisys mainframes in
1990 was 72.4 million. This represents an increase of 11% over 1988.
The projected number for 1996 is 80.5 million pages. Printed pages are
a product of jobs submitted.

Figure # 7: Unisys Transactions
1988-1996

**Online
Transactions
(in millions)**

**43% Increase
in 8 Years**
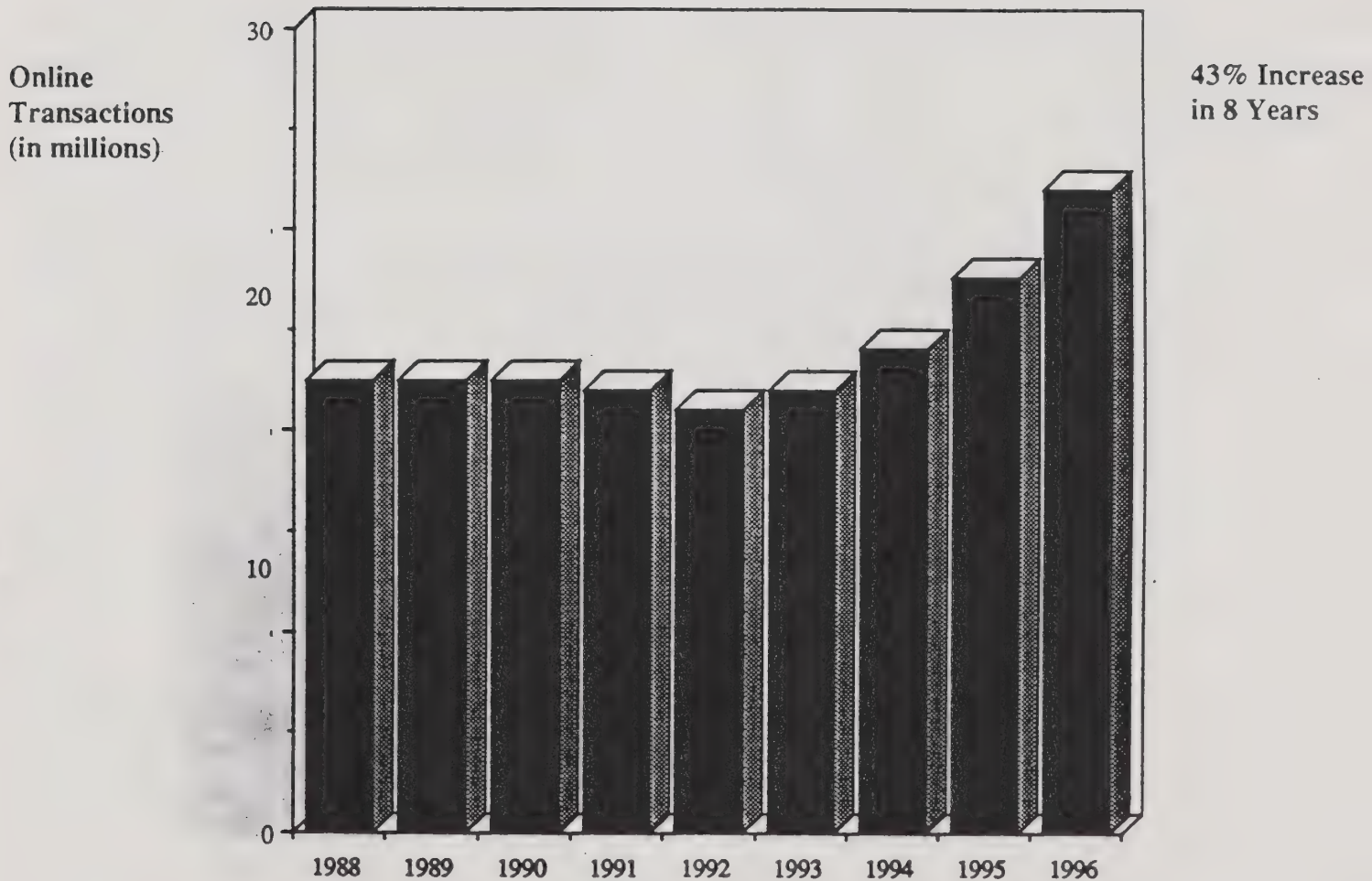
The number of transactions processed on the Unisys mainframes in
1990 was 22.5 million. This represents an increase of .5% over 1988.
The projected number for 1996 is 32 million transactions. Transactions
are data requests and updates performed in data base systems.

Figure # 8: Projected Unisys Processor Growth
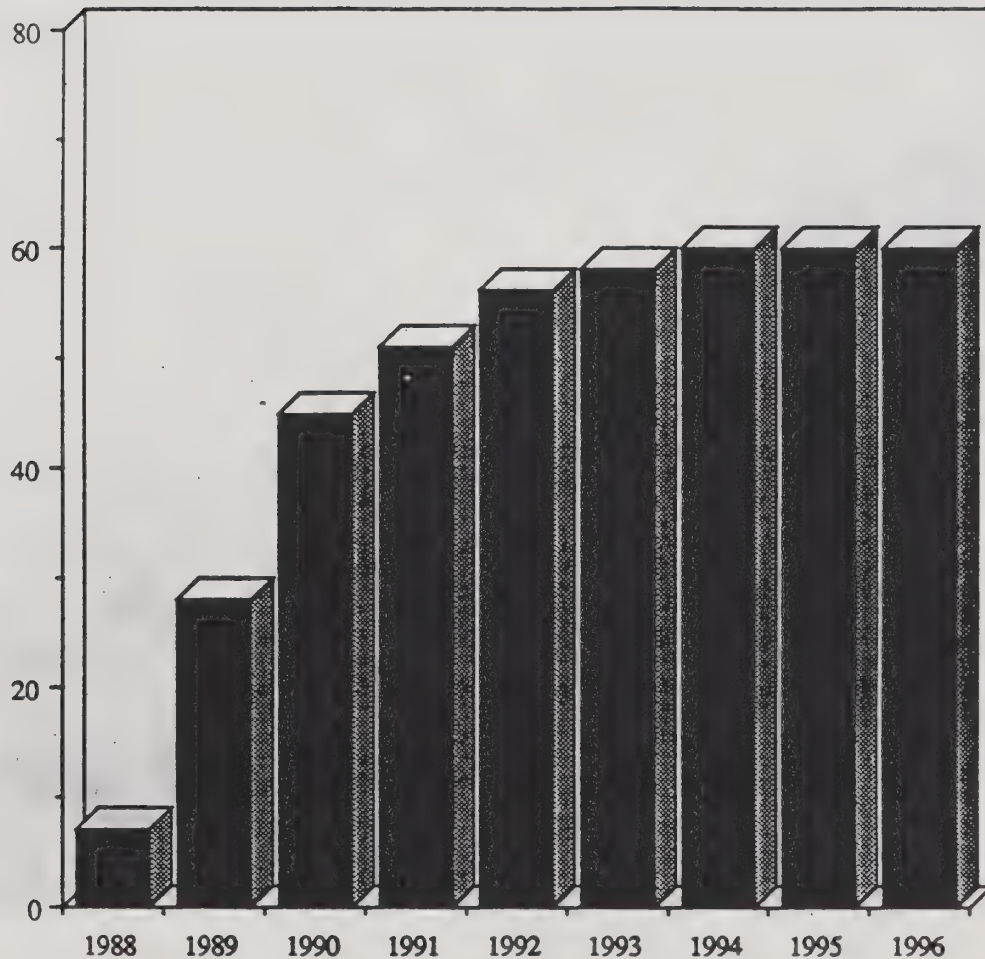## 1988-1996

MIPS
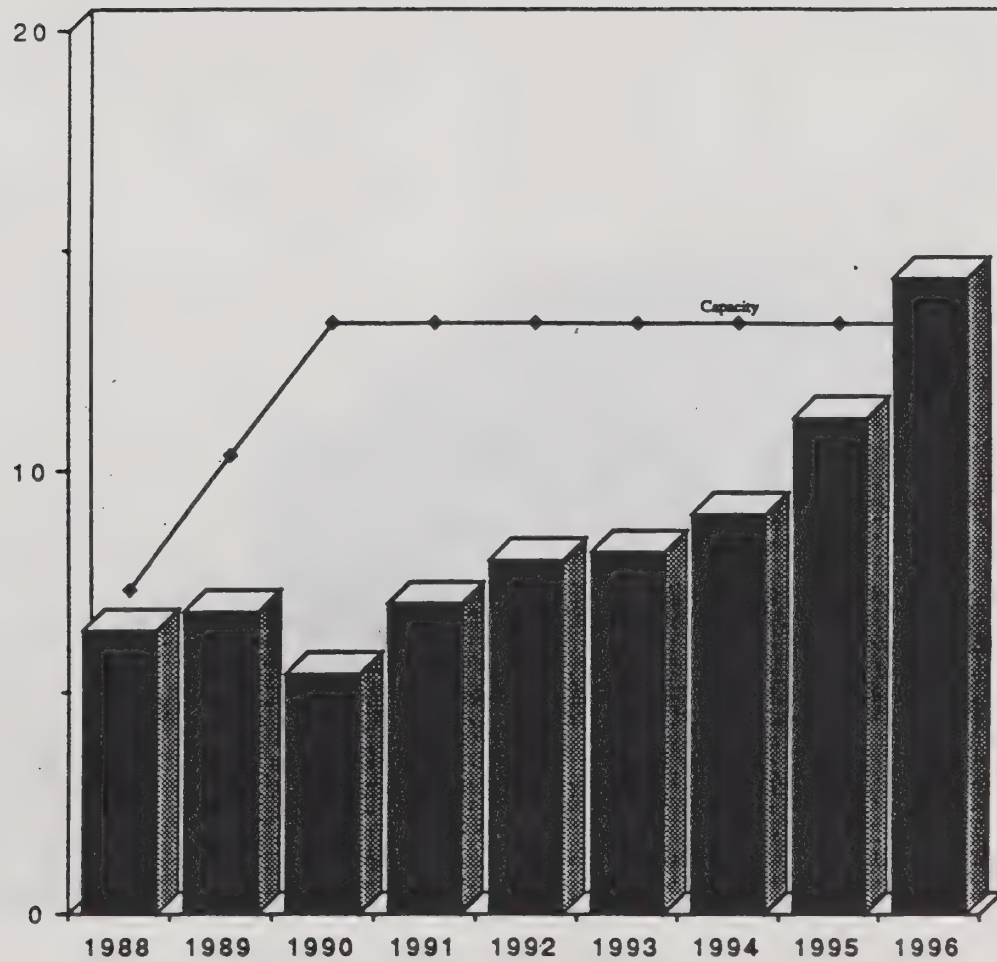
125% Growth
in 8 Years

In January 1991 the Unisys CPU's were rated at 7 MIPS (millions of
instructions per second). This was an increase of 9% over 1988. The
projected number of MIPS for 1996 is 14.4. MIPS is a measurement of
a CPU's processing power.

Figure # 9: Departmental Processors
1988-1996

757% Growth
in 8 Years

In 1988, there were seven departmental processors installed in County
agencies and departments; the following year the number increased to
28. By 1991, this number totaled 51 and is projected to reach 60 by
1996. The total number of departmental processors is expected to
begin to level in 1991 as agencies and departments focus on upgrading
and expanding installed systems and replacing older ones. Examples of
departmental processors include: DEC 8550, Wang VS100, IBM 9370,
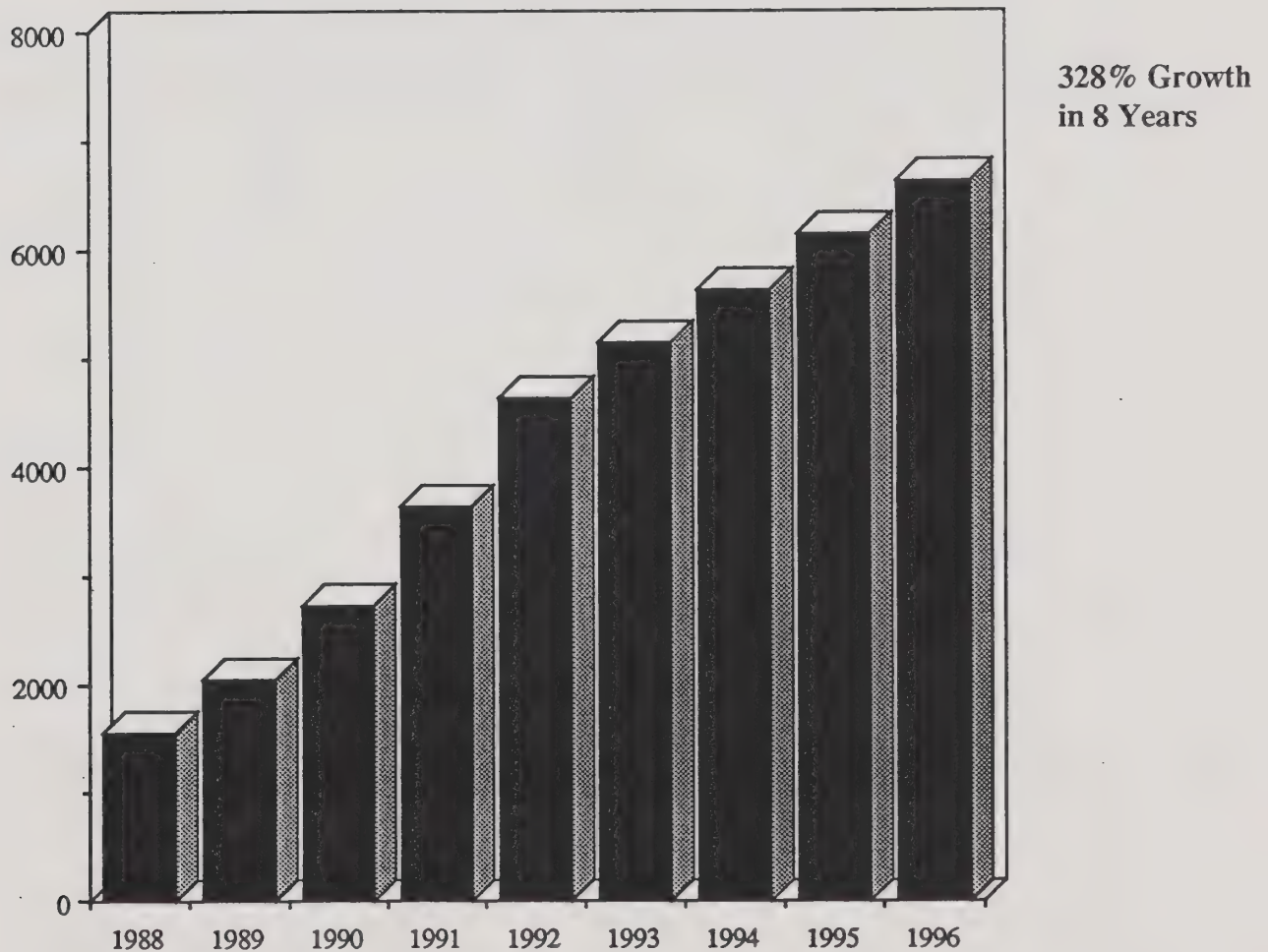IBM AS400, and Unisys 5000 systems.

Figure # 10: Local Area Networks
1988-1996
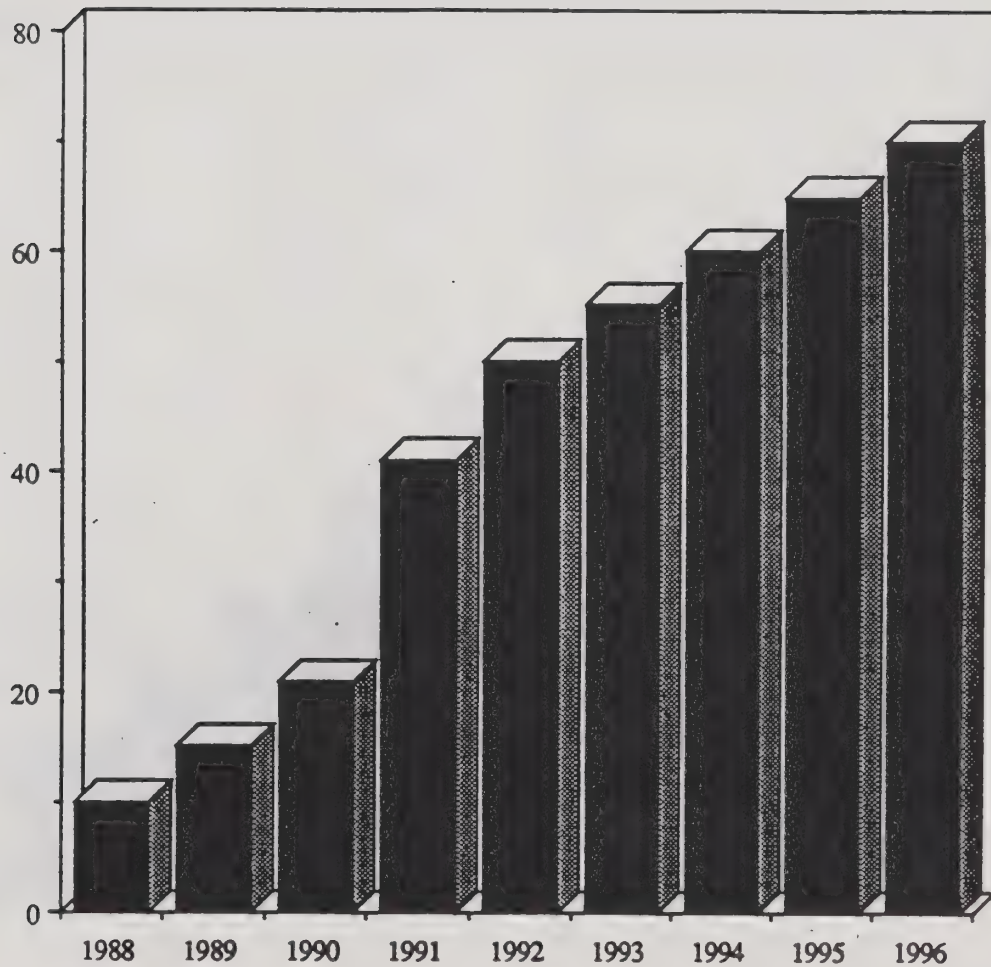
600% Growth
in 8 Years

The first local area network (LAN) in the County was installed in 1985; this number had increased to ten in 1988 and totaled 41 in 1991. This number is expected to increase to 70 by 1996.

Figure # 11: Personal Computers
1988-1996

328% Growth
in 8 Years

In 1983, the County owned six personal computers. This number had increased by over one hundredfold to 775 by 1987 and that number doubled to 1,550 in 1988. Since 1988, the number has increased by approximately one third per year and totaled 3,635 in 1990. It is expected that this rate of new acquisition will continue to increase through 1991 and will then begin to level off to approximately 10-11% as the growth rate in the number of new County employees slows and as departments begin to replace older systems. The total number of personal computers is projected to reach 6,635 in 1996.

This page intentionally left blank

Policy for Information Systems Acquisitions and Projects

The following attachment presents the proposed "Policy for Information Systems Acquisitions and Projects" document.

This page intentionally left blank

**Policy for Information Systems
Acquisitions and Projects**

Date: 11/20/91

I. General Policy Statement

In general all County Information Systems hardware and software acquisitions and/or development (hereafter referred to as "projects"), including but not limited to Candidate Systems, which have a total project cost of $100,000 or more are covered by this policy, whether the projects are done in-house or by vendors, and whether the projects are mainframe or departmental systems or any combination thereof. The exceptions to this policy are as follows:

A. Projects which are less than $100,000 in total cost are covered by acquisition, connectivity and/or competitive procurement standards if applicable. In addition this class of projects is also covered by the software development and project management standards if the projects involve more than one agency/department through data or application sharing or use the centralized data center for processing. These exceptions will be applied on a case-by-case basis by the Director of Information Systems and user management.

B. Projects which are $100,000 or more in total cost may be exempted from coverage by the software development and project management standards if the projects are single agency/department, simple in scope and have easily attainable short term goals. Such projects would be hardware expansions of already existing facilities, with little or no software development. These projects would still be covered by acquisition, connectivity and competitive procurement standards if applicable. These exceptions will be applied on a case-by-case basis by the Director of Information Systems and user management.

II. Specific Policy Statements

A. County Information Systems projects as defined in Paragraph I above shall:

1. be part of a agency/department strategic plan approved by the agency/department head and the CAO and on file with GSA/Information Systems.

2. follow formal County cost/benefit analysis standards for project justification.

3. follow formal County acquisition, connectivity and software development standards depending on the characteristics of the project.

4. follow, where outside procurement is involved, formal County competitive procurement standards, major elements of which are stated in section III below.

5. follow formal County project management standards, major elements of which are stated in section IV below.

6. be subject to a formal post-implementation audit by the Auditor-Controller or CAO as required.

B. The sponsoring user department shall be responsible for preparation of project documents required by this policy, standards and procedures. Specific exceptions to this policy are:

1. RFPs (excluding the Scope of Work) and contracts are the responsibility of GSA/Purchasing.

2. Project plans are the responsibility of the project manager

C. All project documents prepared under this policy, and specifically named in this document, must have written approval by the department's GSA/Information Systems Planning Analyst prior to the project moving to its next step. The documents which are specifically referenced herein are:

1. Cost/Benefit Analysis
2. Requirements Definition
3. Sole Source Justification
4. Scope of Work
5. Request for Proposal, Quotation, or Information
6. Vendor Evaluation forms and instructions
7. Contract
8. Agenda Item Transmittal (AIT)
9. Formal Task-Level Project Plan.

III. Competitive Procurement Standards (including sole source acquisitions)

A. County Information Systems projects will follow GSA/Purchasing standards and procedures for competitive bidding unless a Sole Source Justification is prepared and approved.

B. A Requirements Definition following County standards and procedures, will be developed. The Requirements Definition must be as complete and as definitive as possible as it will be the basis for system acquisition or development and will be included as the major component of any Request for Proposal (RFP) scope of work, and of any contract with a vendor or vendors.

C. A Scope of Work to be included in a Request for Proposal (RFP), a Request for Quotation (RFQ), or a Request for Information (RFI) will be prepared following County standards and procedures.

D. A set of Vendor Evaluation forms and instructions will be prepared following County standards and procedures.

E. A contract will be negotiated with the selected vendor(s) following GSA/Purchasing standards and procedures. The GSA/Information Systems Planning Analyst must be included in the negotiations and a CAO representative may be included at the discretion of CAO management.

F. An AIT will be prepared for Board of Supervisors approval on any of the above items where it is required, following County standards and procedures.
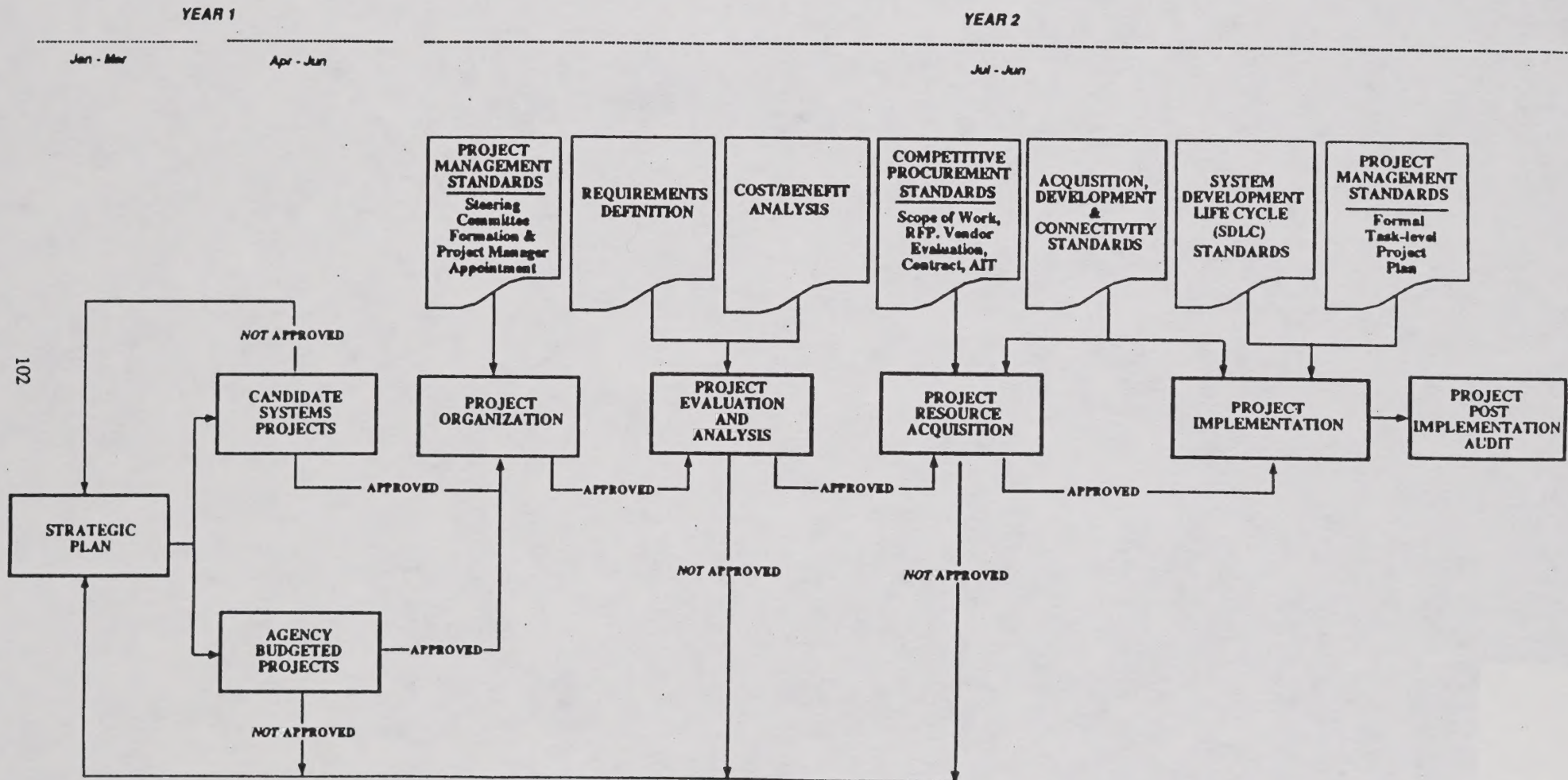
IV. Project Management Standards

A. A steering committee shall be formed consisting of:

1. User management
2. GSA/Information Systems Management
3. CAO Representative

The GSA/Information Systems Planning Analyst for the agency/department with project ownership should attend all steering committee meetings. GSA/Purchasing and Auditor-Controller EDP Audit representatives should attend steering committee meetings as meeting content dictates.

B. A project manager will be appointed by the Steering Committee, and will be accountable for the conduct of the project. The project manager appointment must have the concurrence of the Director of Information Systems.

C. The Steering Committee will meet regularly, usually monthly, over the life of the project to monitor status, make decisions, approve milestones, authorize expenditures and variations from the original plan and consider and deal with any project matters brought to their attention.

D. The project manager will follow County project management standards and procedures, which must include a formal, task level project plan.

INFORMATION SYSTEM PROJECT LIFE CYCLE